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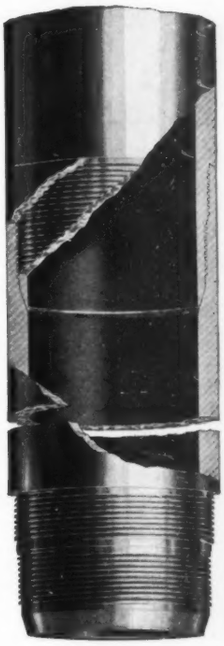

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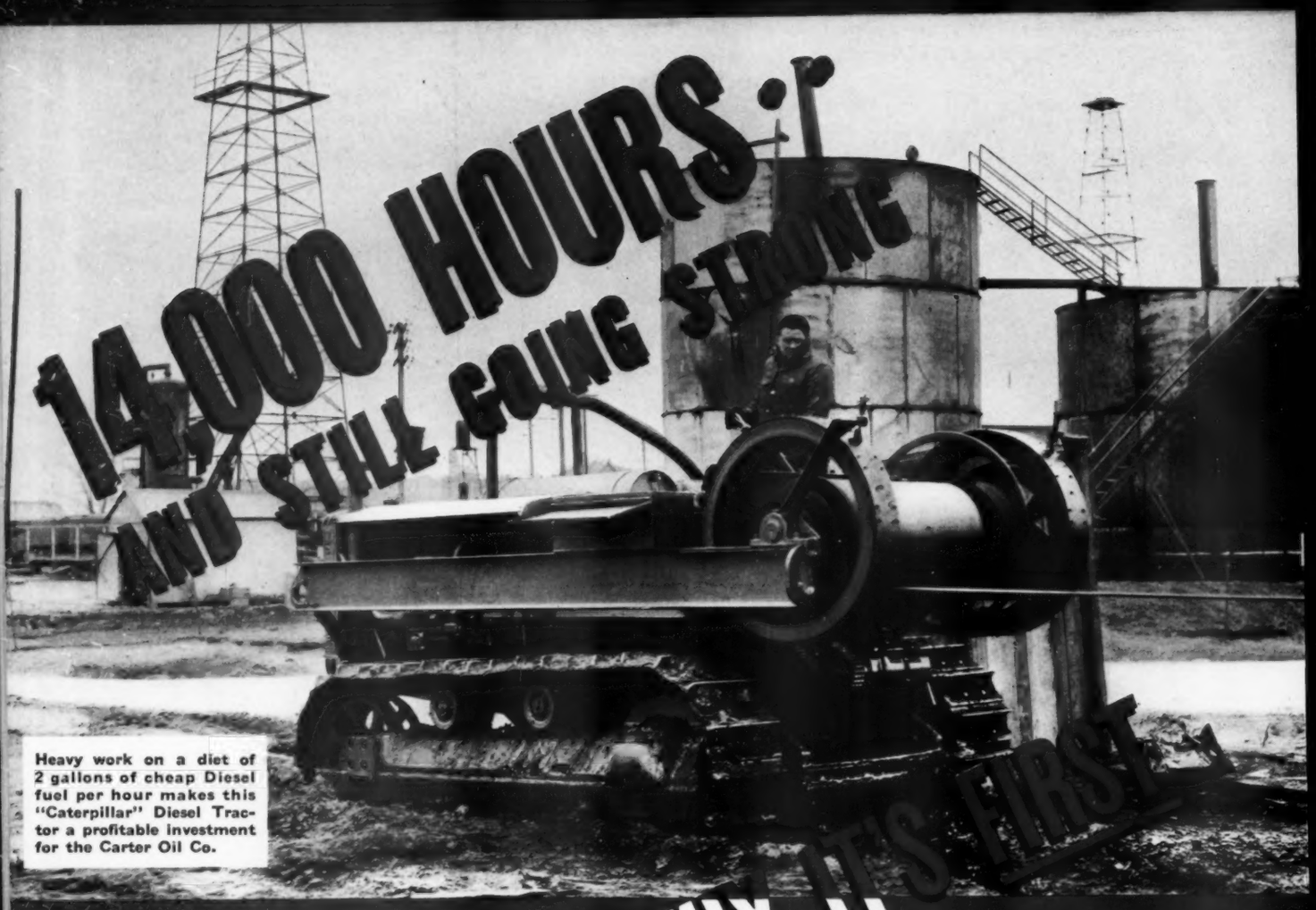

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MAY 28, 1936
VOL. 35, NO. 2

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

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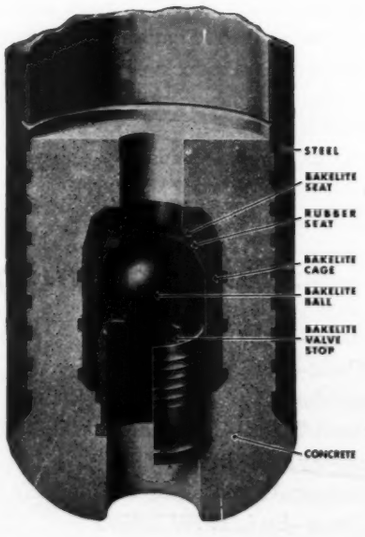

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BAKER CEMENT EQUIPMENT

Four States Plan To Lower Crude Output

CONTINUANCE of crude oil production in excess of three million barrels daily has brought announcements from four states output will be reduced in June. These states—Texas, Oklahoma, Kansas and New Mexico, affiliated with the Interstate Compact—plan to maintain their production within the totals recommended for June by the Bureau of Mines.

If this plan is carried out average daily production in June compared to the past week will show a decline of 58,547 barrels in Texas, 33,801 barrels in Oklahoma, 7,000 barrels in Kansas and 6,700 barrels in New Mexico or a total of 106,048 barrels. This would mean average production in June of 2,897,937 barrels assuming production in the remainder of the country will continue at present levels.

The Bureau of Mines forecasts demand for crude in June as 2,838,000 barrels daily, which provides for a daily reduction of 75,000 barrels in crude stocks. If this reduction is not provided the indicated demand for crude in June would total 2,913,300 barrels daily or more than the proposed production for June based on the curtailment programs.

There are two obvious uncertainties in the plans for June operations as outlined. Based on performances so far this year it is not certain the four states will be able to keep their crude output within their projected allowables for June. There is also no guarantee other states will not increase their output so declines in the four states will not be partially or wholly offset with other increases. Louisiana is the most important factor with a present production which is 60,000 barrels daily in excess of the Bureau of Mines recommendation for June. Louisiana production appears headed for 250,000 barrels daily which would mean an additional 14,000 barrels daily.

Production 3,003,985

Decrease 1,455

In the refinery end shipments of gasoline over the past week reflected a seasonal upturn in consumption partially explained by preparations for Decoration Day holiday period which marks the start of the summer demand. The few reported changes in wholesale and retail prices pointed to weakness rather than strength despite improved demand.

The outstanding feature of the past week's field operations was the proving of 3,000 additional acres of productive leases in the Cass County side of the Rodessa field. This was made possible by the completion of a wildcat test. The northwest end of the Oklahoma City extension is believed to have been defined by a relatively small well which shows 15 per cent water along with the oil. A deep sand was opened in the old Cement field in Oklahoma. McPherson County, Kansas, saw the opening of a new pool and the extension of the Graber pool. A new pool was opened west of the Playa Del Rey field in the Los Angeles Basin of California.

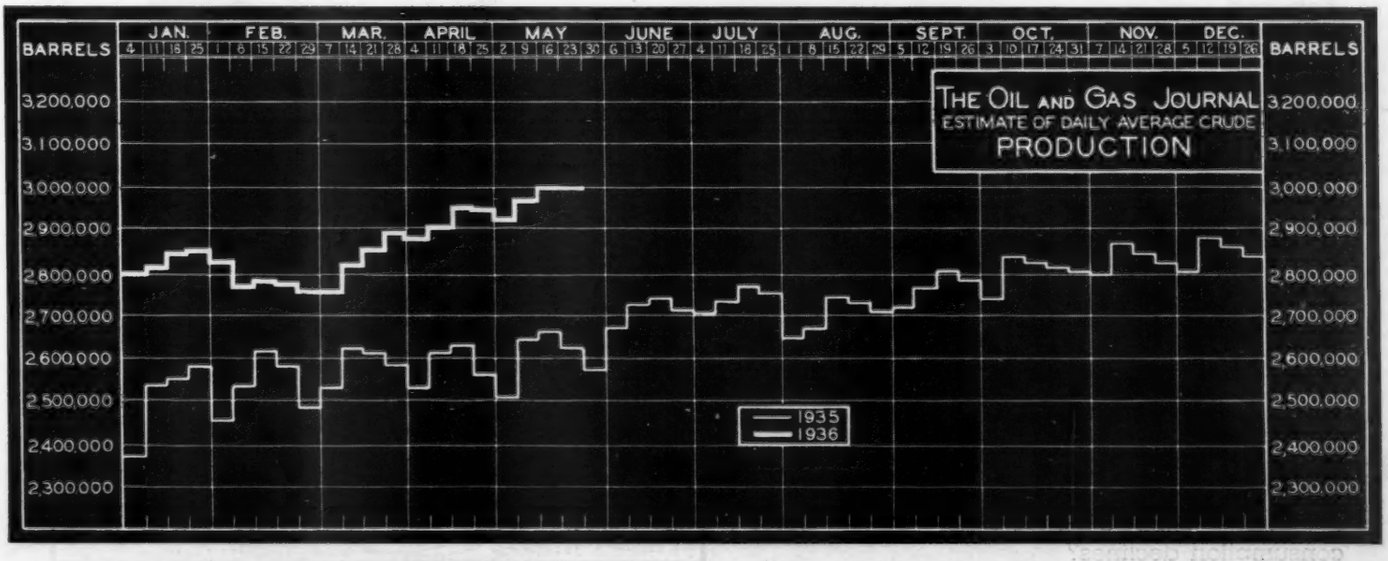
Daily Average Production for Week

	May 23 1936	May 16 1936	May 25 1935
Oklahoma City	141,825	155,400	160,575
Seminole-St. Louis	103,910	105,225	101,400
Remainder of state	312,941	299,900	261,675
Total Oklahoma	558,676	560,525	523,650
East Texas	455,292	455,197	472,925
West Texas	185,950	185,137	143,742
North Central Texas	85,587	85,250	91,507
Texas Panhandle	65,251	63,032	60,525
East Central Texas	52,389	55,336	48,634
Gulf Coast—Texas	259,182	254,792	180,490
Southwest Texas	80,596	81,387	58,330
Total State of Texas	1,184,247	1,180,131	1,056,153
North Louisiana	89,250	82,535	23,160
Gulf Coast—Louisiana	147,195	144,150	111,628
Total Louisiana	236,445	226,685	134,788
Santa Fe Springs	42,300	45,000	36,000
Long Beach	66,900	68,000	64,000
Mountain View	27,500	28,200	7,200
Kettleman Hills	79,800	80,000	53,100
Remainder of state	357,750	360,600	323,700
Total California	574,250	581,800	484,000
Kansas	157,125	160,500	152,900
Arkansas	29,975	29,960	31,140
Eastern fields	107,750	108,200	105,000
Michgian	33,727	34,899	39,075
Rocky Mountain Area	121,790	122,740	98,270
Total United States	3,003,985	3,005,440	2,624,976

Crude Oil Stocks in U. S.

(BUREAU OF MINES ESTIMATES)

Week ending May 9, 1936	314,899,000
Week ending May 2, 1936	314,192,000
Week ending May 11, 1935	341,771,000



SPARKS FROM THE NEWS

Excess

Gasoline stocks May 31 will be 9,500,000 bbls. above year ago and crude stocks have been piling up 75,000 bbls. daily surplus. Gain in consumption cannot keep up with that.

Banknote

Texas bankers convention resolves to cooperate with Louisiana bankers to help solve Rodessa problem. Will Louisiana bankers reciprocate?

Necessity

Mr. Lieb's suggestions: Modification of law of capture and scientific proration based on engineering experience rather than expedience are essentials as well as ideals.

Price

Total investment in oil industry today is $13,276,000,000. Reminder to motorist what it costs to have gasoline and oil on tap when and where needed.

Caution

Colonel Thompson should not be too sure Guffey decision means end of federal oil control agitation. It has more lives than a cat.

Rebound

Petroleum taxes in 1935 were almost double what they were in 1929. There's one sort of recovery.

Handicap

June gasoline demand is estimated 9 per cent more than a year ago and crude 7 per cent more, both modified, however, by necessity for reducing excessive stocks.

Foreboding

If overproduction is perilous now during consuming season what will it be when seasonal consumption declines?

Orient

With 20,000-bbl. wells, commitments for 10,000 bbls. daily and refinery nearing completion to run 10,000 bbls. more Bahrein Island takes its place in the sun.

Exposure

Coal industry's support of oil import tax, coupled with its sponsorship of Borland bill to tax all fuel oil, shows its hand plainly.

Reason

Judge Bryant's remark about "thoroughly unreasonable" production intimates "rule of reason" has not yet been thrown out of court.

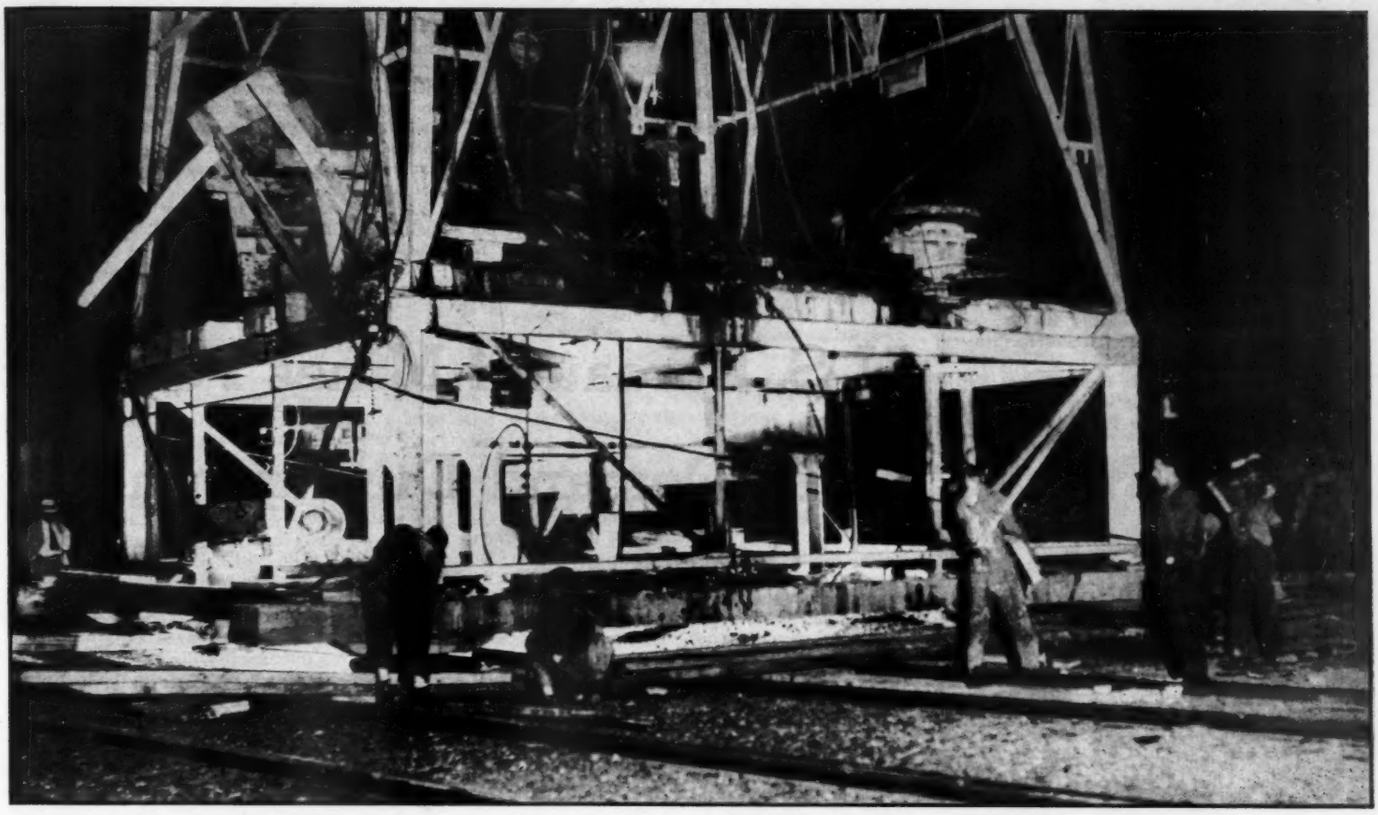
Illustration

Mr. Lovejoy's emphasis on waste of reservoir energy finds timely demonstration in Rodessa pool.

Limits

President Byles tells Louisiana "men will not stand around and take that sort of punishment." Baton Rouge just can't get away with it.

ENDANGERING ALL



Skidding rig at night across tracks at Rodessa on right of way of Kansas City Southern Railroad

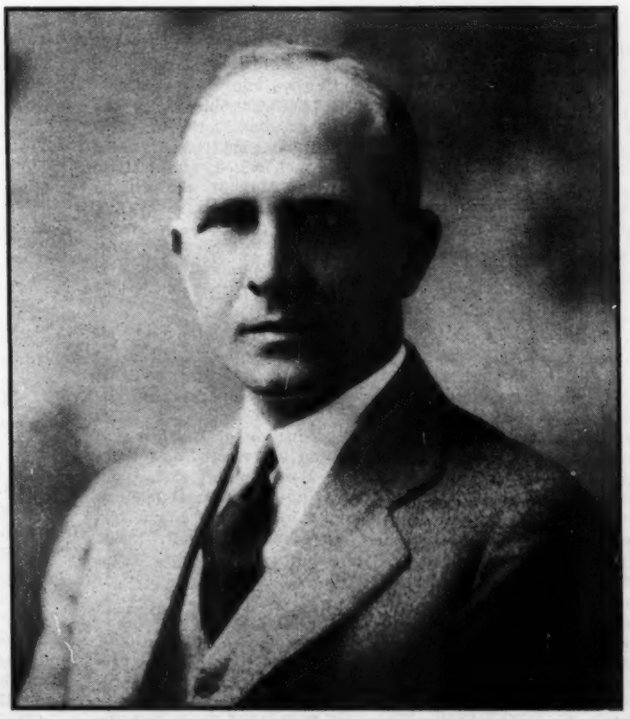
Excess "Thoroughly Unreasonable," Court Says; Impounds Rodessa Oil

By H. STANLEY NORMAN

SHREVEPORT, La., May 26.—Purchasers of crude produced under orders "thoroughly unreasonable" were placed on notice last week by Federal District Judge Randolph Bryant of Sherman, Tex., that they may be required to impound it indefinitely.

The court's oral declaration that 71,374 bbls. of oil impounded in Tide Water Oil Co.'s facilities at Sour Lake and at Nettleton stations were produced under a "thoroughly unreasonable" order was delivered from the bench May 21 in Sherman in the federal government's successful attempt to halt interstate movement of Rodessa pool crude produced from Pelican Oil & Gasoline Co.'s Sexton lease.

In ordering the oil moved so far by East Texas Pipe Line Co. (to the account of Tide Water under terms of a contract negotiated May 25) impounded, Judge Bryant brought an abrupt halt in Pelican production over its regular allowable of 350 bbls. per day per well. A few rumors persisted at the end of last week that the Pelican company lease had not been choked back completely to its regular allowable, but that its Sexton lease continued to produce about 7,500 bbls. per day with the excess, or about 3,000 bbls. daily, going into lease storage. With purchasers unable to move the oil or use it after it crossed the state line under terms of Judge Bryant's ruling, the demand for crude produced under the famous "special order" declined to zero.



Federal District Judge Randolph Bryant

Richard H. Hill, special assistant United States attorney attached to Federal Tender Board No. 1 at Kilgore, Tex., directed testimony of a group of Shreveport oil company executives and placed in the record statements that the excessive production from the Pelican 13-well lease had resulted in disproportionate drainage, increased gas wastage, reduction of the ultimate recovery of oil from the common reservoir and had speeded up water encroachment.

A. H. Weyland, general manager of the Arkansas Natural Gas Co.; F. E. Lacaze, district manager of United Gas Public Service Co.; R. H. Dow, vice president of Haynes Drilling Co.; W. L. Yauger, district chemist, United Gas Public Service Co.; Lamar Baker, secretary of Haynes Drilling Co., all of Shreveport; H. W. Bell, Rodessa, geologist and petroleum engineer for Standard Oil Co. of Louisiana, and B. E. Lindsly, senior petroleum engineer, petroleum conservation division, department of the interior, all testified to substantially the same facts.

Mr. Lacaze, district manager for United, which owns most of the prop-

erty surrounding the Pelican lease, testified well pressures had declined from 100 to 225 pounds on offset locations and a drop of 75 to 100 pounds had been registred in pressures on wells three-quarters of a mile from the Pelican lease line. The special order under which the Pelican lease was authorized to produce a maximum of 20,000 bbls. per day for 60 days was issued by Dr. J. A. Shaw, director of the minerals division of the Louisiana Department of Conservation.

"The oil has not been produced validly or legally and is contraband oil and the channels of interstate commerce are denied to it," declared Judge Bryant in issuing the impounding order.

Testimony that 24,872 bbls. of Rodessa crude were resting in Tide Water Oil Co. facilities at Sour Lake on the Gulf Coast and that 48,147 bbls. were held at the Tide Water tank farm at Nettleton in Gregg County, Texas, was given by George Goad, representative of the Tide Water crude oil purchasing department.

Before testimony in the Pelican case was heard, H. R. Wilson of Fort Worth succeeded in arguing for dismissal of charges against Texas Co. and Texas-Empire Pipe Line Co. Tide Water, owner of a quarter interest in Texas-Empire main line from Nettleton station to the Gulf Coast, had used facilities of the jointly owned company for transporting the oil to Sour Lake. Defendants were limited to East Texas Pipe Line Co., East Texas Refining Co. and Tide Water Oil Co. before testimony was introduced.

In response to arguments by Dillard Estes, counsel for defendants, that oil produced under Dr. Shaw's special order was not contraband and that the order itself never had been questioned, Judge Bryant declared:

"Allowables must be fixed upon a reasonable basis. I think this order is thoroughly unreasonable. Louisiana officials can't bring in oil from Louisiana and destroy Texas markets. I say on the face that it is farcical and not reasonable."

Another hearing on the 71,734 bbls. of oil impounded by Judge Bryant was to have been held early this week in Tyler for an order of disposition. In his order impounding the crude, Judge Bryant placed in the record that there was no imputation of bad faith upon the part of any defendants. Although most offsets to the Pelican lease are in strong hands, the failure of nearby acreage holders to take retaliatory measures on the "drop of the hat" was held by oil men as evidence most are concerned with the good of the entire industry.

While most are inclined to assign the attitude of Pelican's neighbors to the fear of price cuts by the purchasers, oil men claim it is a clear cut victory for stability. The fact that offset owners permitted disproportionate drainage from their properties for more than a week while a neighbor was extracting an average of 10,450 bbls. per day over the regular allowable is considered a healthy sign and one that probably averted a price cut.

However, one offset lease owner was "shopping around" for a purchaser to run "special order" oil from his property despairing of efforts to obtain relief from Louisiana officials who declined to act on numerous protests from irate royalty owners and oil men in general. No few producers in the Rodessa district expressed grave fear that unless conditions existing up to Thursday were halted unwelcome federal intervention would be speedily forthcoming. A Texas attorney, close to the petroleum administration at Washington, was reported in the national capitol "on official business." Since his departure for Washington followed opening of the Pelican's lease for the second time under Dr. Shaw's special order, many oil men attached particular significance to his eastern trip.

Production from Rodessa, including nine wells on the Cass County, Texas, side of the pool, is averaging approximately 65,000 bbls. per day with the Pelican excess deducted and including only that concern's allowable. The field now contains 190 completed wells, but some are incapable of making their allowable. However, in instances where an operator has one or two wells falling below the regular allowable and others on the same lease capable of more he is averaging the top.

At least 10 additional completions will be added during the present week adding 3,500 bbls. to the daily allowable. Under this steady climb in production, oil men are now chiefly concerned over the June proration order for Rodessa, which under past conditions has been patterned by Louisiana officials and copied by the Texas Railroad Commission.

Various invitations from Ernest O. Thompson, chairman of the Texas commission to Gov. Richard W. Leche of Louisiana for a joint hearing on the Rodessa pool have been declined. Governor Leche advised Colonel Thompson he would be unable to participate in a proposed joint hearing at Marshall, Tex., June 3 or 5.

Chairman Thompson, in inviting Louisiana officials, called attention to the waste of gas in the Rodessa pool. "They say," he was quoted, "that about 300,000,000 feet of gas is wasted daily. Isn't that about half of the former waste in the Panhandle (Texas) that was called a national scandal?"

In declining the invitation Governor Leche maintained his aloofness from cooperative control.

U. S. Bureau of Mines Forecast in Demand During June

The daily average production of crude for June, recommended by the Bureau of Mines to meet the estimated demand, is 2,838,300 bbls., an increase of 12,000 bbls. above the recommendation for May, and 187,300 bbls. (7 per cent) above the allowable for June, 1935. The increase reflects seasonal and normal gains in gasoline consumption, mainly offset by increases in the recommended withdrawals from gasoline and crude oil stocks.

For the past four weeks (up to May 9) crude production has averaged about 2,992,000 bbls. daily, stocks have increased at the rate of 109,000 bbls. daily, indicating an actual crude demand of 2,883,000 bbls. daily, about 20,000 bbls. above the bureau's estimate, but if the Bureau's suggestions as to reducing gasoline stocks had been followed the crude demand would have been less than calculated.

Motor Fuel

The domestic motor fuel demand for June is estimated as 42,690,000 bbls., a daily average of 1,423,000 bbls. Although this is 13 per cent above the indicated demand for June 1935, it is only 9 per cent higher than the "normal" or estimated actual for that month.

Exports—Nearly complete returns from exporters indicate there will be a material decrease in gasoline exports in June compared with June, 1935, hence the forecast has been set at 2,050,000 bbls., slightly below the estimate for May, but materially lower than for June 1935.

Stocks.—Stocks of finished and unfinished gasoline on March 31 were 74,485,000 bbls. There was practically no change in gasoline stocks in April, and if the Bureau's recommended reduction for May (3,100,000 bbls.) is met, which, at this time appears doubtful, stocks on May 31 will still be above 71,000,000 bbls., or 9,500,000 bbls. more than on May 31, 1935. In view of the excessive stocks the recommended withdrawal for June has been raised to 4,010,000 bbls., approximately 1,000,000 bbls. above both the normal for the month and the recommendation for May.

Production.—Motor benzol production and "direct" sales and losses of natural gasoline have been estimated at 900,000 bbls., the same as May. The addition of exports, and the deduction of the stock decrease and "direct" sales, gives 39,830,000 bbls. as the required production of finished and unfinished gasoline in June, distributed as follows (thousands of barrels): East Coast, 6,050; Appalachian, 1,600; Indiana-Illinois, 6,490; Oklahoma, 2,770; Kansas-Missouri, 2,500; Texas Inland, 3,110; Texas Gulf, 8,320; Louisiana Gulf, 1,660; Arkansas-Louisiana Inland, 1,010; Rocky Mountain, 920; California, 5,400.

Crude

Runs to Stills.—The estimate of the ratio of natural gasoline used by refiners to the total production of gasoline has been increased in accordance with the usual seasonal rise, from 5.5 per cent, the low point of May, to 5.7 per cent in June. This percentage gives 2,270,000 bbls. of natural gasoline to be utilized at refineries, leaving 37,560,000 bbls. of gasoline to be made from crude. The estimated yield of cracked and straightrun gasoline is 44.61 per cent, a slight increase over May. This percentage gives 84,200,000 bbls. of crude required for runs to stills.

Imports—Runs to stills of foreign crude for June are estimated at 2,800,000 bbls., the same as in May.

Exports, Fuel, and Losses.—The forecast of crude exports has been reduced slightly, 4,000,000 bbls., compared with 4,200,000 bbls. in May. Losses and the consumption of crude as fuel are estimated at 2,000,000 bbls.

Stocks.—Provision has been made for withdrawal of 75,000 bbls. daily from crude stocks, a reasonable recommendation for this season, although it differs widely from the experience of the last two months (up to May 9) which shows crude stocks increasing at an average rate of 75,000 bbls. daily.

Required production.—The proper additions and subtractions give 85,150,000 bbls. as the required production in June, 1936, a daily average of 2,838,300 bbls., distributed as follows:

TABLE 1—RECOMMENDATORY LEVELS OF REQUIRED CRUDE OIL PRODUCTION BY STATES

(Daily averages in barrels)

State—	May 1936	June 1936
Texas	1,132,500	1,125,700
Oklahoma	538,300	552,500
California	*544,000	*536,500
Louisiana	170,500	175,700
Kansas	150,100	153,100
New Mexico	65,900	68,300
Pennsylvania	43,000	42,600
Wyoming	35,600	37,800
Michigan	38,200	37,000
Arkansas	31,000	31,800
Kentucky	13,900	14,000
Montana	12,900	13,000
Illinois	11,700	12,300
New York	11,800	11,900
Ohio	10,500	10,500
West Virginia	9,900	9,900
Colorado	4,400	4,700
Indiana	2,100	2,000
Total	2,826,300	2,838,300

*The recommendations for California for May and June have been calculated for those months only and are not intended calculations for the current year.

Governor Leche Undisturbed

BATON ROUGE, La., May 25.—Governor Richard W. Leche holds there is nothing in the situation in the Rodessa oil field calling for action on his part.

"Everything seems to be all right up there," he said, "though I heard some talk about somebody wasting gas."

Magnetic Storm

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report moderate magnetic storm began at midnight May 18 and ended at 4 a.m. May 20 central time. Their telegram follows:

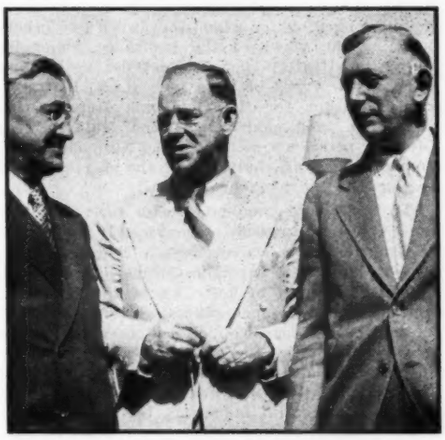
"Moderate storm began eighteenth. Zero. Ended twentieth. Four."

Drill Fewer Wells Is Advice of Lovejoy

Addressing I.P.A.A. Tulsa Meeting

That the flow of oil wells can be restricted artificially without injuring their ultimate productivity is the most important discovery in the industry's history, declared John M. Lovejoy, president of the American Institute of Mining and Metallurgical Engineers, at the midyear meeting of the Independent Petroleum Association of America, held Thursday, May 21, in the Mayo Hotel, Tulsa. Deeper proration is inevitable, Mr. Lovejoy added, and the one thing to do about it is to slow down drilling.

At the business session of the association, presided over by Charles F. Roesser, Fort Worth, Tex., president, subjects of discussion included the



T. J. Steuart, C. E. Buchner and H. B. Fell, I.P.A.A. officers

Rodessa menace, the mounting production of crude oil, the Disney bill and a resolution urging legislation that would forbid use of foreign asphalt in federal highway projects.

"Louisiana in April produced 50,000 bbls. per day in excess of the Bureau of Mines quota and a similar excess in May seems inevitable," said E. A. Landreth, Fort Worth, Tex., commenting on the Rodessa field. "The only solution would seem to lie within the state of Louisiana. If Louisiana cannot be persuaded to become a party to the interstate compact, then the oil industry in Louisiana should be educated in the effect of unrestricted production upon crude oil prices and oil operating profits. Friendly counsel from oil men of other states and political persuasion for more stringent conservation laws in Louisiana may yield surprising results if tactfully pursued. Wide-open flow conceivably could wreck the present price structure. The industry needs to repair its machinery of self-government."

Reason for Alarm

Mr. Landreth pointed to the all-time crude production record of 3,000,000 bbls. daily as a reason for alarm. If the interstate compact plan fails, federal regulation will be demanded, he said.

Wirt Franklin, Ardmore, Okla., and others urged the importance of the bill introduced by Congressman W. E. Disney, of Oklahoma, and now in the Ways and Means Committee of the House. The bill would discontinue the present exemption from excise taxes now enjoyed by importers of fuel oil for supplies on vessels and would double the excise tax on crude petroleum, fuel oil and gas oil and all liquid derivatives excepting lubricating oil and gasoline or other motor fuel. A new tax of $2 a ton would be levied on imported asphalt, natural or otherwise.

Foreign asphalt, it was asserted, has taken possession of over 50 per cent of the domestic market. A tariff on asphalt and increased tariffs on fuel oil, Mr. Franklin said, would result in a market for the heavy ends of crude and a lightening of the burden which now must be carried by gasoline.

The resolution looking to exclusion of imported asphalt in federal highway projects was adopted without a dissenting vote, and members of the association were urged to write their representatives in congress.

A resolution adopted by the board of directors called attention to the fact daily production of crude exceeds consumptive demand by 174,000 bbls. because major oil-producing states are exceeding the quotas recommended by the Bureau of Mines. It urged immediate steps by regulatory authorities to bring production within the allocations recommended by the bureau.

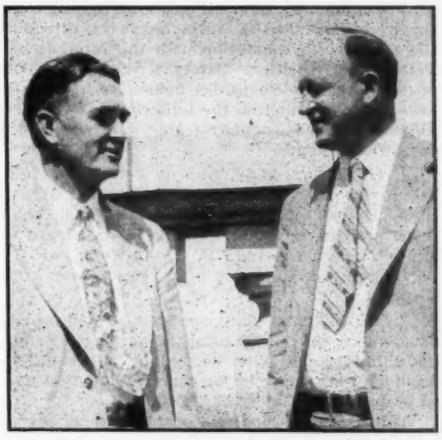
Mr. Lovejoy's address, on "Some Economic Aspects of Proration," was delivered at the banquet held Thursday evening. Mr. Roeser, as master of ceremonies, introduced Mr. Lovejoy as an outstanding engineer of the oil industry.

"The most important single discovery made by the industry," said Mr. Lovejoy, "was the realization that the flow of oil wells could be artificially restricted without damage to the ultimate productivity of the wells. As soon as this fact was definitely demonstrated the industry began voluntarily to modify the old rule of capture through the medium of proration and a new era in the industry commenced. Concurrently a new technical profession came into being, the profession of petroleum engineering. During the unrestricted reign of the law of capture the engineer had little chance to try out any theories which might lead to greater ultimate recovery but with the introduction of proration, scientific production methods were required and soon the petroleum engineer became an essential group within the industry. The engineer, in conjunction with the progressive operator, has made the production of oil a true scientific mining operation.

Begun as Expedient

"The period from 1926 to 1931 proved to be one of almost continuous new discovery and once having started proration we never since have been able to absorb currently more than a small percentage of the new flush production developed. But a strange thing has happened. The entire conception of proper production methods has changed so that today no competent operator would consider unrestricted open flow of flush wells. With or without organized proration no new field will ever again, in my opinion, be produced without regard to the intelligent use of the reservoir energy inherent therein. Restricting flush production originally for the purpose of stabilization proved to be the greatest step toward true conservation ever undertaken.

"Restricted flow then, is a good thing for the industry and for the country, but its application



Wirt Franklin and J. S. Bridwell

and regulation are difficult and often inequitable. We are not yet sufficiently educated to conduct our business on a purely cooperative basis and too often a selfish minority prevents a proper and efficient development program for a field. Consequently, it has been necessary for the great oil producing states to pass laws under which proration is regulated and, unfortunately, laws cannot be made to dovetail entirely with modern engineering technique. When we are a little wiser we shall need no laws to force upon us a development which every instinct of common sense tells us we can do better by voluntary cooperation.

"For the present, however, we still need the help of certain laws. As engineers and operators, I think we should encourage legislation in every oil state prohibiting the waste of the reservoir energy of oil fields, purely and entirely as a conservation measure. This energy is a force which when prematurely exhausted if used for inferior purposes causes a loss to the state of incalculable value and is forever irrecoverable.

"Engineers now believe that over 80 per cent of the recoverable oil in a field can be naturally flowed to the surface but to do this we must experiment with gas-oil ratios and other field problems until we find a production rate approximately in balance with the expansion of gas in solution and the movement of water into the sand being drained.

Following Will-o'-the-Wisp

"Even with good conservation laws our problem is not entirely solved. With proration based solely on well potentials there is an apparent reward for close well-spacing. A few operators in a field may force this issue until the viscious circle of close spacing spreads throughout an en-

A MILLION DOLLAR SMILE

Marshall R. Young and C. F. Roeser, of Roeser and Pendleton, Inc., sell East Texas properties for $1,600,000

tire field. Legislation covering well spacing is most difficult because of the many variable factors, such as costs, price for crude, etc., which must be considered before determination of that well spacing which will yield the maximum recovery of oil. But as to maximum recovery of dollars, there can be no question. Those who believe they will benefit by drilling more wells per acre than are necessary to drain their property are led by a will-o'-the-wisp. In the end, they will force their neighbors to do likewise and neither they nor their neighbor will make as many net dollars from their property.

"In most of the recently discovered fields the operators among themselves have been able to agree on reasonable well spacing and this is strictly adhered to. We should need no laws in this matter. Common sense and a knowledge of simple economics should be sufficient.

"The decline in prorated wells in invisible. There is, of course, a decline in the potential of the prorated well, but that is offset by the potential of the 10,000 new wells. In looking for decline then we are limited to the 290,000 odd wells which include all the small wells, strippers, and edge wells. I estimate the production from this group at about 900,000 bbls. per day, or an average of 3 bbls. each. After allowing for 5,000 of the 15,000 new wells to stem the decline, it is reasonable to assume that this group will decline some 50,000 bbls. daily in the period of one year.

"Let us assume an overall increase in demand for the next year of 3 per cent, or roughly, 150,000 bbls. per day. We have found then, that through decline and through increased demand, we can assign 200,000 bbls. per day more at the end of a year to prorated wells, but we will have by that time 10,000 more wells to prorate. There are now some 50,000 wells prorated to 2,000,000 bbls. per day, or an average of 40 bbls. each. At the end of a year we will have 60,000 wells prorated to 2,200,000 bbls., or an average of 36 bbls. per well. Project similar calculations further into the future and you must conclude that we are facing deeper proration and relatively diminishing returns.

"In my opinion then deeper proration is inevitable. This affects the pocketbook of every oil producer. What can be done about it? There is only one answer and that is to slow down the rate of drilling new wells."

Safety Meeting Proves Feature on Exposition Week Program

First aid men from all parts of the oil country were assembled in Tulsa last week attending the meetings in connection with the International Petroleum Exposition. Safety directors for many of the large oil companies held a technical session on May 21 and on the following day the first aid meet for oil company teams was held on the exposition grounds.

J. H. Savage, Mid-Continent Petroleum Corp., Tulsa, was director of the meet with Jack Hynal, U. S. Bureau of Mines, McAllister, Okla., chief judge assisted by E. E. Quenon, U. S. Bureau of Mines, Vincennes, Ind. D. J. DeWeiss, of the Bartlesville, Okla., station of the bureau was time keeper.

Awards for first place consisted of gold medals donated by the Mid-Continent Petroleum Safety Council. First aid kits donated by Mines Safety Appliances Co. Large loving cup (perpetual) donated by International Petroleum Exposition.

Awards for second place consisted of silver medals donated by the Mid-Continent Petroleum Safety Council. Driving goggles donated by American Optical Co.

Awards for third place consisted of bronze medals donated by the Mid-Continent Petroleum Safety Council. Automobile fire extinguishers by Lux Fire Equipment Co.

For the artificial respiration contest the following awards were made—Perpetual loving cup awarded by E. D. Bullard Co. Small individual loving cup for team members which match large cup donated to each member by Mid-Continent Petroleum Safety Council. First aid kits donated by E. D. Bullard Co.

Automatic pencils donated to each member of the 23 first aid teams by the Robert-Johnson & Rand Shoe Co., St. Louis, Mo., branch of International Shoe Co.

The standing of the various teams in the first aid contest held on May 22 is as follows: 1. Magnolia Petroleum Co. Refinery No. 1, Beaumont, Tex.; 2. Humble Oil Co., Houston, Tex.; 3. Texas Co. Refinery, West Tulsa, Okla.; 4. (tie) Empire Co., Production, Lamont, Kans., and Continental Oil Co. Refinery, Ponca City, Okla.; 5. Texas Co., Pipe Line, Okmulgee, Okla.; 6. Phillips Petroleum Co. Refinery, Kansas City, Kans.; 7. Empire Co. Refinery, Okmulgee, Okla.; 8. Gulf Oil Co., Production, Houston, Tex.; 9. Lone Star Gas System, Dallas, Tex.; 10. Phillips Petroleum Co., Production, Kaw, Okla.; 11. Empire Co. Refinery, Ponca City, Okla.; 12. Tide Water Oil Co. Refinery, Drumright, Okla.; 13. Phillips Petroleum Co., Gasoline Department, Kaw, Okla.; 14. Skelly Oil Co., Gasoline, Carter Nine, Okla.; 15. Marathon Oil Co., Production, Eliasville, Tex.; 16. Ohio Oil Co., Robinson, Ill.; 17. Continental Oil Co., Production, Wichita Falls, Tex.; 18. Indian Refining Co., Lawrenceville, Ill.; 19. Magnolia Petroleum Co. No. 2 Refinery, Beaumont, Tex.; 20. Shell Petroleum Co. Refinery, Houston, Tex.; 21. Ohio Oil Co., Shreveport, La.; 22. Derby Oil Co., Production and Pipe Line, Wichita, Kans.

Articial respiration: 1. Tide Water Oil Co.; 2. Texas Co., Refining, West Tulsa; 3. Gulf Oil Co.

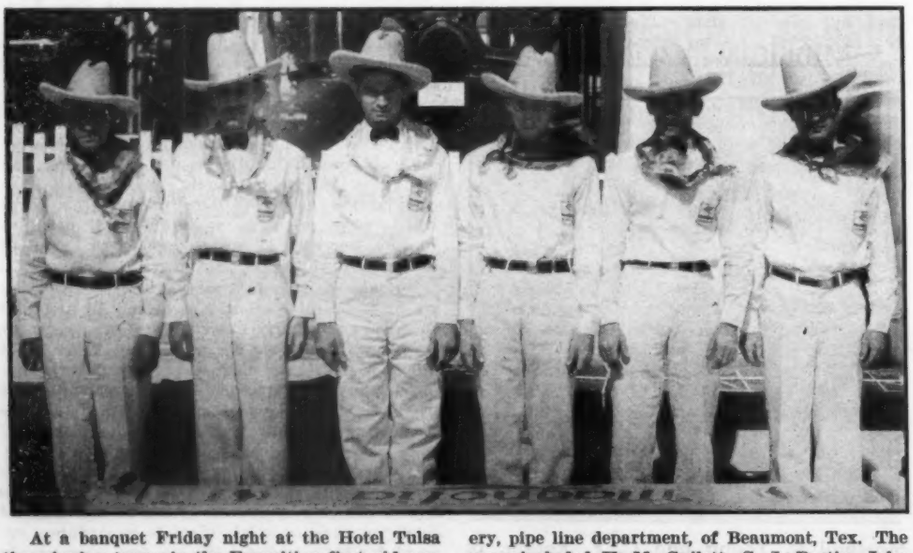
The safety conference held Friday was divided into two sessions with lunch between and speakers were heard at all gatherings. The subjects were varied, men speaking from the standpoint of the oil companies for whom they work and others outlining the views of the insurance companies and national safety council which deals with this work in all types of industry. R. S. Huffman, safety director for the Oklahoma Natural Gas Co., Tulsa, and chairman of the Mid-Continent Division, petroleum section of the National Safety Council, acted as chairman of the meetings and presided at the noonday lunch.

H. N. Blakeslee, safety director for the American Petroleum Institute, who recently moved his headquarters from Dallas, Tex., to New York City, presented the first paper on the morning program following a report of activities of the petroleum section by R. B. Roaper, general chairman for that division. Mr. Blakeslee pointed out the enviable record achieved by the petroleum industry in reducing accidents in all departments. From a record in 1927, 18 per cent worse in frequency than the frequency of all industries, the petroleum industry climbed to a position better than the average of all industries in 1932, and has maintained that position each year since.

In 1927 the severity of injuries was 30 per cent worse than the average for all industries, but in 1934 for the first time, the petroleum industry annual summary of injuries showed a severity less than that of all industries, and with an 8.3 per cent reduction in 1935 that position has again been maintained. Another source of satisfaction is the reduction of frequency of fatal injuries from 76 fatalities per 100,000 workers in 1928 to 37 fatalities per 100,000 workers in 1935.

There were about 130 members in attendance at the lunch and meetings and many of the papers were discussed at some length because of their general interest as applied to the problems of the petroleum industry.

MAGNOLIA PETROLEUM CO. WINNING FIRST AID TEAM



At a banquet Friday night at the Hotel Tulsa the winning teams in the Exposition first aid contest were given awards. Gold medals were given the team from the Magnolia Petroleum Co. refinery, pipe line department, of Beaumont, Tex. The crew included H. M. Guilett, C. J. Partin, John Cain, G. L. Linscomb, Manuel Coate and H. E. Crawford. Coaches: W. H. B. Fehl and C. M. Liles.

Roeser & Pendleton East Texas Properties Sold to Atlantic

Fort Worth, Tex., May 25.—The East Texas properties of Roeser & Pendleton, Inc., Fort Worth, were purchased last week by Atlantic Oil Producing Co., producing subsidiary of Atlantic Refining Co. for a total consideration of $1,600,000. J. K. Wadley, independent operator, is associated with the Atlantic company in the purchase.

The price includes $400,000 in cash and the remainder from 50 per cent of the crude as produced. The seller reserves the right to store the crude should prices decline below $1.00 per barrel. The property consists of 11 leases with a production of 550 bbls. daily from 29¾ wells. The productive leases total 221 acres. Additional wells are to be drilled by the new owners.

Most of the productive acreage is in the thick sand section in Gregg County with part of the production in Upshur. The average price per well was $53,000.

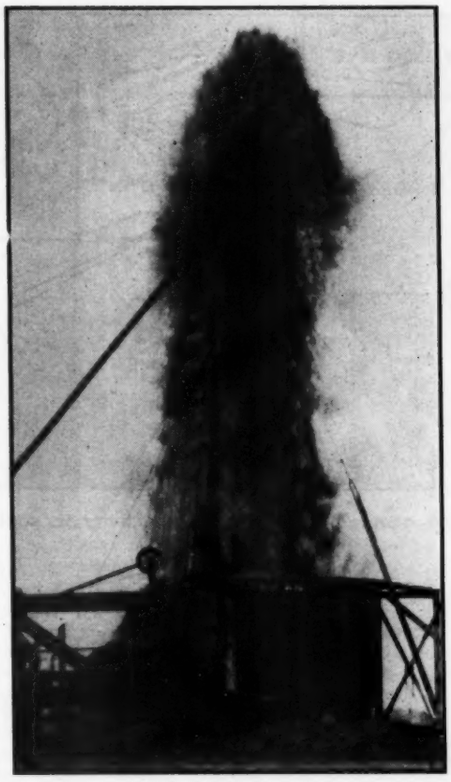
New Discoveries Revive Field Work In Kansas Stripper Well Districts

By DAL DALRYMPLE

The stripper districts of southeastern Kansas seldom make the headlines in the oil news outside the local areas, that distinction going to the more sensational fields in the central and western counties where flush production is the rule. Yet there is considerable drilling activity in Woodson, Wilson, Neosho, Elk, Chautauqua and Montgomery Counties, in fields that had their heydey some 25 or 30 years ago. New wells are being drilled, others deepened to new pay horizons. Old pools are being extended and, occasionally, oil is found in areas that were overlooked during the early days in the development of southeastern Kansas' petroleum reserves.

The old shale gas area of eastern Wilson County, developed 30 years ago but largely dormant in recent years, has been given new life with the discovery of oil in Bartlesville sand. This new oil pool is located between the towns of Earlton and Altoona, and a few miles southwest of the city of Chanute, Neosho County. The area originally was developed as a gas field, and it was in deepening one of the old gassers that oil was found in sufficient quantity to start the current drilling campaign. At last report there were 15 oil wells in the oil pool, and some 11 wells were being drilled. Most of the oil is bought by the Petroleum Products Co., which takes it by trucks to the company's refinery at Chanute.

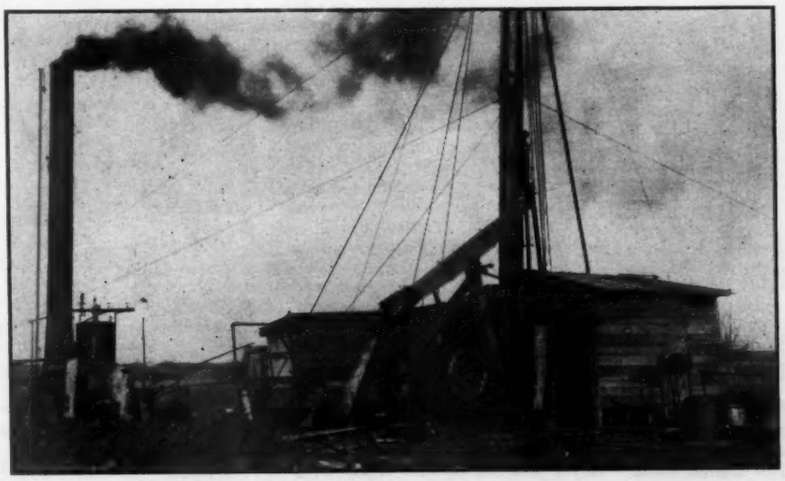
Oil production is found in Bartlesville sand topped at 830 to 840 feet, and the pay averages about 40 feet thick. The old gas wells were bottomed in shale at 745 to 760 feet. The wells usually are shot with 100 or more quarts of nitroglycerin, and are brought in with initial production frequently as large as 100 to 125 bbls. One of the new wells was reported to have produced 250 bbls. in the first 30 hours after the shot. However, production declines rapidly and the wells soon are producing at the rate of 10 to 15 bbls. daily. This is an unprorated district and operators are inclined to hold production down in order to keep it so. Light rigs and machines are used; the wells can be completed in from 10 days to two weeks, with good luck, and the market is close at hand. The area is heavily leased. Chanute operators have taken the lead in this development. Among the more active operators in the area are Charles McDonald, Carr & Gillilan, James Nolan, Tweedel Oil Co., G. W. Greer and associates, G. Barham, Cooper & George, Major Oil Co. and others.



This is J. P. Campbell and others No. 1 McDonald, in the new Wilson County, Kansas, pool, following a heavy shot

Possible Trend

There are some who believe the new Wilson County pool may connect with the Burghart Trend area south and east of Chanute, in Neosho County, but other observers challenge that belief. Geological information is lacking, and the issue may not be decided until the intervening acreage has been drilled. If it is proven that the two areas are connected, a considerable drilling campaign will follow. The producing sand in the new wells is similar to that found in wells on the Burghart Trend, but wells on the older part of the trend run about 50 feet higher than the new producers. Many old wells are situated on the Burghart Trend, which is a strip about 400 feet wide, extending about 5 miles from northeast to southwest. The trend is located 6 miles southeast of Chanute. Frank Young, one of the leading independent operators of Chanute and head of the Petroleum Products Co., is one of those who doubts that the Burghart will be extended into the new Wilson County field, but he does believe it may be extended to the north and east, as it has never been defined in those directions. Accordingly, he is planning to drill several wells in the northeast part of the Burghart this year.



Typical drilling rig in Wilson County, Kansas. This is the outfit with which Wentworth Brothers have been drilling a "deep" test in the area near Chanute

About 10 miles west of Chanute and in northeastern Wilson County, the Wentworth Brothers, three operators who live respectively in Fairfax, Okla., and Peabody and Clearwater, Kans., were drilling a test—deep for this district—on the McFadden farm. They planned to drill to the second break in the Mississippi lime, or Wilcox sand, which was expected at about 1,700 feet. Drilling with light equipment and working part time only, they were making slow progress. At last reports they were drilling around 1,500 feet. In 1924, Frank Young drilled three Wilcox sand producers to the north and west of the Wentworth test. His No. 1 well had initial production of 100 bbls. of oil, natural flow, and was producing 15 bbls. daily when it and the other tests were plugged after they began producing some 300 to 400 bbls. of salt water each. The oil, heavy and of little commercial value at that time, was shipped out for fuel. Considerable interest is attached to the present deep test.

Revival in Woodson

Woodson County has been favored by several operators who refused to be lured away by the newer and "greener" fields further west. Oil activity in the county has gained considerable momentum this year, scarcely a week passing without new tests being started by Chris Sheedy and associates, the Woodson Pipe Line Co., Saco Oil Co., N. C. Dunn, Max Reynolds, Aikman & Young, Franklin Drilling Co., Roy Johnson or other operators. Several producing wells have been completed in recent months in northwestern Woodson County, as well as in the area immediately north, in the neighborhood of Gridley in southwestern Coffey County. Con A. Aikman of Wichita, and Bert Young of Emporia, recently extended a pool in the Hoagland sector of Woodson County, or else opened a new first-break Mississippi lime pool, with their No. 1 Reed, in section 26-23-14. The best pay in lime was found at around 1,618 to 1,622 feet, and production was estimated at 50 to 60 bbls. daily. As a result of this strike, other tests were due to be started in the general area.

The old Neosho Falls district of northeastern Woodson County has had a revival of activity somewhat similar to that in the Chanute area, albeit on a lesser scale. More than 12 years ago numerous gas wells were completed in that sector at around 1,100 feet. Many of the operators drilled about 20 feet deeper and struck oil. That was before the days of acidizing, however, and as oil production totaled only 1 or 2 bbls. a day it was not profitable to pump the wells. Now, operators are going back into that old area,

drilling the gas wells deeper or acidizing the old 1-bbl. producers and getting 25- or 30-bbl. producers. Kilby & Birk of Gridley, Newland & Knox, John Willey, N. L. Smith of Kansas City, and J. S. Ball are among the operators in this sector. Most of the activity is in Townships 23 and 24-17e.

Western and southwestern Woodson County has been the scene of considerable activity lately, where several operators are drilling along the Bartlesville trend. Chris Sheedy recently completed a sizeable well at No. 1 Tipton, NW cor. section 28-25-14, which made a potential of 240 bbls. from Bartlesville sand at 1,390 to 1,436 feet, after plugging back from Mississippi lime where water was encountered at 1,510 feet. Saco Oil Co. of Eldorado and Wichita has extended its activity along the Bartlesville trend in southern Woodson County, recently leasing some 5,000 acres and starting drilling operations in Township 26-15e.

Successful Acidization

Increased production in many of the old wells of Woodson County, as well as in other sectors of eastern Kansas, is the current objective of major operators in this district. Pure Oil Co. is having success in acidizing wells in Township 24-14e that were completed at around 1,700 feet 10 or more years ago. Sinclair Prairie Oil Co. has been installing metal pump jacks on some of its old producers, preparatory to acidizing.

The Gridley district of Coffey County may see an increase in activity soon. The Barbara Oil Co. has been making a subsurface survey of the Gridley area with a view of drilling some tests thereabouts. The company has numerous small producers southwest of Gridley.

Montgomery County

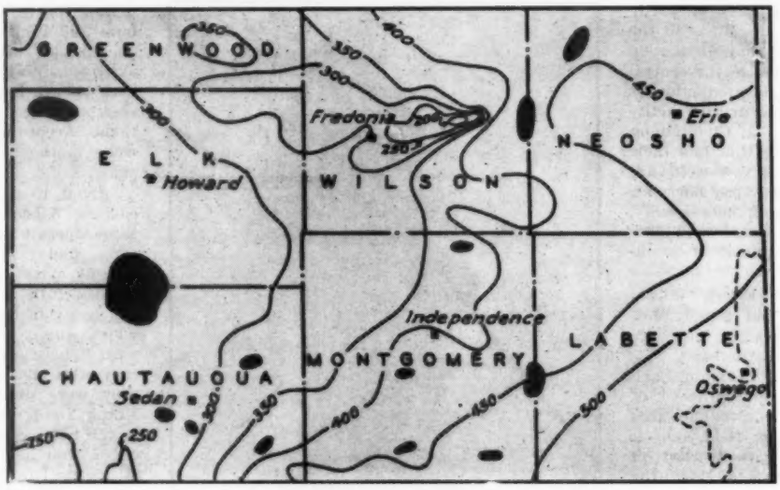
Several tests are drilling in Montgomery County, south of Wilson County and just across the state line from Nowata and Washington Counties, Oklahoma. Activity in the fields near Independence has increased in marked degree in recent months, but oil men of that city say that there will be even more drilling, cleaning out and deepening done in the county this summer. Veeder Oil & Development Co. has been developing leases in the northeast part of the county, where profitable production was expected. Earlier this year Elmer Beeler and associates drilled three wells on Cities Service Co. land 6 miles south of Independence, and are drilling more tests in SE section 1-34-15. Henderson Oil Co. has been drilling in the area between Independence and Bolton; George Steinberger has been drilling to the west of Independence, and C. O. Crane drilled a well 2 miles north of Dearing. Other rigs are running in the vicinity of Cherryvale, where William Voorhees No. 9 Shanton, section 18-31-16, was drilling, and where some good production was found; and near Dearing and Tyro. The work in the shallow gas areas in the southern part of Montgomery County continues at a good rate, with new tests, cleaning out of old wells and reconditioning of leases keeping the fields fairly active. There has been considerable development work along the Labette-Montgomery County line, east of Liberty. Six or more tests recently have been completed in this sector, getting small Bartlesville sand production at around 760-80 feet, and several other tests are being drilled. This activity largely is in Township 33-17e. No large producers have been completed, but the pay is found at depth at which small wells can be produced profitably.

Elk and Chautauqua

Elk and Chautauqua Counties have shared in the southeastern revival. Discovery of Siliceous lime production in the area south of Moline, along the Elk-Chautauqua County line, has stimulated activity and resulted in one of the most interesting plays in the older producing districts of the state. The new Moline area is in the Flint Hills, a north extension of the Osage country. Numerous wells in Elk and Chautauqua Counties have been producing from Oswego lime and Chat for several years, and the finding of Siliceous lime production not only is expected to account for the drilling of numerous new tests but the deepening of many of the old wells.

Siliceous Lime

Griffin Producing Co. and William Bell of Tulsa have completed several Siliceous lime producers in the pool, in Township 32-10e, in Chautauqua County. Their No. 3 Julian, NE cor. section 2-32-10, an old oil and gas well in the Chaffin district, was deepened to Siliceous lime several months ago, increased production and started the new play. Previous oil production was from Oswego lime. Their No. 12 Oliver, NW section 1-32-10, completed some weeks ago at 2,280 feet, total depth, extended Siliceous production about three-fourths of a mile southeast of No. 3 Julian. It found the new pay at total depth of 2,280 feet, just in top of the lime. No production tests were made, the new wells being immediately put on the pump and the daily yield held down to 50 bbls. Estimates of potential production of these and other wells drilled in the district ranged as high as 1,000 bbls. daily, but were not confirmed by the owners. The No. 2 Oliver is another old well deepened to the new pay.



Black spots show general location of new activity in southeastern Kansas

Drilling Operations

Other operators drilling in the area, on both sides of the county line, include D. R. Lauck, Wichita operator; Diller Oil Co., Saco Oil Co., Katz and associates, Sagamore Oil Co., Harry Jones, John Croft and associates, National Union Co. and others. The Saco and Diller companies, operating together, and associates have assembled a block of around 1,500 acres in Township 31-10e, in Elk County, and have started a considerable program of deepening old wells or drilling new ones. Central Oil Co. had started work at a townlot test in Moline, and prospects were that the town soon would have a considerable townsite activity.

In northwest Elk County, the Clay Petroleum Co. and Frank Anderson No. 1 Shambaugh, SW SW NW section 21-28-9, has opened up another new Siliceous lime area. It had the lime at 2,838-50 feet and production was estimated at around 300 bbls. daily. It was pumping through 2-inch tubing, into Sinclair Prairie Pipe Line Co. connections. Same operators were drilling other wells in section 20-28-9 and section 21-29-9.

In Chautauqua County, John and Art Denman of Independence and Sedan, Kans., apparently have opened a new pool at No. 1 Shirk, in section 21-33-12, near Monett. It was an old shale gas well that was deepened, and oil began rising in the hole at 1,652 feet, but no production estimate was made and the well was shut in for lack of outlet. The Denman brothers have had gas production in that vicinity for some time, but this is the first oil of consequence to be found in the immediate area.

The Niotaze area of southeastern Chautauqua County has a share in this revival of activity that has come to the stripper districts. H. V. Dougherty and Walter Isenhart of Kansas City have taken a block of leases northwest of Niotaze and were reported preparing to start six shallow tests thereon. Mr. Dougherty formerly was Colorado state geologist, has studied the acreage and thinks prospects favorable for production. A proposed deep test was reported for the sector just west of Sedan. W. P. Whitworth and associates of St. Louis were said to be preparing to drill to at least 3,000 feet at a test on the Casement farm, about 2 miles west and south of Sedan.

There is nothing sensational in any of this activity; no production that threatens to flood the markets of the nation. But there, in those southeastern Kansas counties that had their first oil excitement many years ago, is a considerable activity that scarcely is heard outside the local areas, for the greater part of the district is not even scouted by major oil companies. With few exceptions, the operations are being carried on by local operators, with much of the oil refined locally and marketed locally.

Southeastern Kansas stripper districts long since have had their booms, but they still produce considerable oil and will produce much more in years to come. Not less an authority than N. W. Bass, of Washington, D. C., federal geologist, says that eastern and southeastern Kansas are due for considerable new oil development. In a speech at Chanute a short time ago he predicted numerous discoveries of the "shoestring" type of pool in Woodson, Greenwood, Cowley and Butler Counties, especially.

The map accompanying this article shows, in black, some of the areas where new activity has been under way or is proposed. One of the accompanying pictures shows a typical drilling outfit being used in the Chanute district, and the other picture was taken when one of the new Wilson County wells came in after a heavy shot.

3,000 Productive Acres Added to Rodessa in Cass County

SHREVEPORT, La., May 26.—It is conservatively estimated that completion of the American Liberty Co.'s No. 1 Rambo producer added 3,000 acres to the proven production of the Rodessa pool in Cass County, Texas.

Prior to completion of No. 1 Rambo, approximately 1,000 acres of proven land rested in Cass County. On basis of the present development, technicians believed that at least half of the Rodessa structure will overlap into Cass County with the factor of southwestern limits still undetermined.

Some of the more optimistic, but nevertheless close students of seismograph information, correlated with reflections in the proven part of the pool, anticipate that two other similar structural conditions exist to the southwest, reaching into Marion and Harrison Counties, Texas. Although actual drilling remains to prove or disprove mapped theories, major companies have been particularly active in acquiring acreage at prices ranging up to $250 per acre southwest to Lodi, Tex., in Harrison County. Due to old Spanish surveys, cut into odd shapes and sizes, existing in the eastern part of Texas, drilling on the Cass County side of the Rodessa structure probably will average a greater density than one well to 20 acres.

In two instances so far, operators owning long, narrow 30-acre tracts north of the American Liberty No. 1 Rambo have been granted nine location permits on each, an average of more than one well to 4 acres.

Record Exposition in 1938 Is Assured

By Success of This Year's Show

The tenth International Petroleum Exposition which will be held in Tulsa, May, 1938, will be larger than the record-breaking exposition brought to a close Saturday night and may be extended over two weeks, according to an announcement of officials. It is planned to increase the attractiveness of the bi-annual exposition as a meeting place for those interested in the technical progress of the industry, and preliminary plans call for a congress which will be world wide in scope.

Decision to widen the scope of the exposition was made at the request of both exhibitors and visitors. While 180,235 paid admissions established a new attendance record for the exposition held last week, a 10 to 14-day show will enable more of the industry's key men to attend and spend longer periods familiarizing themselves with new operating methods and equipment around which the exposition centers. Some of the major oil companies found it difficult to arrange field and plant operations so that all employes could spend one or more days at the exposition. Additional days planned for 1938 will remedy this situation.

Exposition officials also plan to have more meetings during the 1938 exposition. Programs of associations and technical societies tie in directly with the new equipment and supplies on display and attract those particularly interested in the research, development and engineering operations of the industry as well as the economic phases. One plans calls for holding the World Petroleum Congress, which is sponsored by the Institution of Petroleum Technologists, in Tulsa during the exposition. This congress will meet in Paris in the summer of 1937 and it is not believed that another World Congress could be held before the 1940 exposition. It has been suggested that a smaller congress along similar lines could be held in 1938.

General satisfaction was expressed Saturday night by all concerned regarding the ninth International Petroleum Exposition. Statistics of the eight-day exposition as summarized by officials were as follows:

Number of exhibitors—546.

Value of equipment exhibited—$12,000,000.

Sales of equipment and supplies during exposition (estimate)—$20,000,000.

Paid admissions—180,235.

The attendance exceeded that of 1934, the previous record, by 16 per cent. Forty-four states were represented with the total attendance of foreign representatives approximately 100. The foreign representatives, which included a large number of widely known operators in major fields and plants outside the United States, included Venezuela, U.S.S.R., India, Germany, Spain, Mexico, England, Canada, France, Colombia, Greece, West Indies and Rumania.

A majority of exhibitors sold all the major equipment they had on display at their booths and it was being moved directly from the exposition to the fields the first of the week. Many other sales were consummated. The purchases made during the eight-day period were said to have exceeded those of any previous exposition.

In response to requests from exhibitors for additional space, booth facilities will be enlarged for the 1938 exposition. The exposition site covers 20 acres and this will be increased if necessary. Additional exhibitors have made request for sites on which they can erect permanent buildings. The several buildings owned by the exposition will be rearranged in line with expansion plans for 1938.

Special arrangements may be made in 1938 for a mammoth exhibit of automotive equipment used in the oil industry, according to W. B. Way, general manager of the exposition. Inquiries have been received from several manufacturers regarding this arrangement for the next exposition.

Rodessa Hearing Called

SHREVEPORT, La., May 26.—Pelican Oil & Gasoline Co. reports its Rodessa wells choked to allowable of 350 bbls. per day.

The Texas Railroad Commission has called a hearing at Marshall June 12 to hear testimony for proration of production in the Cass County side of the Rodessa pool which is now permitted the same allowable as prevailing in Louisiana or 350 bbls. per well daily.

Louisiana officials have not announced intentions of attending the Marshall hearing, but will be at least represented.

Governor Allred Aloof

AUSTIN, Tex., May 25.—In answer to inquiries, Governor James V. Allred disclaimed any knowledge of or intent to take part in the current controversy over the oil production of the Rodessa field in Louisiana.

OFFICIALS AND SUPERINTENDENTS OF THE OHIO OIL CO. AT THE EXPOSITION

Left to right, back row: A. L. Burch, producing department, Tulsa; J. J. Frommer, production superintendent, Oklahoma City; A. L. Henderson, production superintendent, Iraan, Tex.; M. E. Wagner, general production superintendent, Tulsa; Glenn Bish, production superintendent, Hobbs, N. Mex.; John Donnell, Findlay, Ohio. Front row, left to right: T. W. Haught, production superintendent, Elliasville, Tex.; O. D. Donnell, president Ohio Oil Co., Findlay; W. W. Fleming, president Marathon Oil Co., Tulsa; O. V. Dill, production superintendent, Cement, Okla.; W. E. Smith, gasoline superintendent, Eliasville, Tex.; E. B. Stewart, production superintendent, Cromwell, Okla.; J. L. Cook, vice president and treasurer, Marathon Oil Co., Tulsa; A. W. Gordon, retired, Tulsa; and J. S. Hasson, production superintendent, Shreveport, La.

Eastern District A.P.I. Program for Pittsburgh, Pa., Meeting

The final program for the annual meeting of the Eastern District of the American Petroleum Institute Division of Production to be held June 4 and 5 at the William Penn Hotel, Pittsburgh, Pa., follows:

Thursday, June 4, 10 a.m., presiding: S. W. Meals, president, Carnegie Natural Gas Co., Pittsburgh, Pa. Address of Welcome: Mayor W. N. McNair of Pittsburgh.

"Drilling in Gas Wells Under High Pressures," by Frank M. Brewster, president and general manager, Belmont Quadrangle Drilling Corp., Bradford, Pa. Discussion by: J. G. Montgomery, Jr., manager of operations, United Natural Gas Co., Oil City, Pa., and C. B. Turner, vice president, South Penn Oil Co., Pittsburgh, Pa.

"Deep Well Drilling Problems and Their Solution," by K. C. Heald, chief geologist, Gulf Oil Corp., Pittsburgh, Pa. Discussion by: C. R. Fettke, professor of geology, Carnegie Institute of Technology, Pittsburgh, Pa.; H. R. Pierce, Oil & Gas Recovery Co., Sistersville, W. Va., and C. D. Hunter, geologist, Kentucky-West Virginia Gas Co., Ashland, Ky.

1:30 p.m., presiding: George Wittmer, III, Wittmer Oil & Gas Co., Pittsburgh, Pa.

Introduction of Axtell J. Byles by J. French Robinson, president, Peoples Natural Gas Co., Pittsburgh, Pa.

"Production and the Compact," by Axtell J. Byles, president, American Petroleum Institute, New York City.

"Taxation and Oil Production," by T. W. Phillips, Jr., president, T. W. Phillips Gas & Oil Co., Butler, Pa. Discussion by: C. A. Smith, Peoples Natural Gas Co., Pittsburgh, Pa., and J. Edgar Pew, vice president, Sun Oil Co., Philadelphia, Pa.

"Hopeful Present-Day Signs for Eastern Oil and Gas Production," by P. H. Curry, president, South Penn Oil Co., Pittsburgh, Pa. Discussion by: E. H. Tollefson, general superintendent, Hope Construction & Refining Co., Clarksburg, W. Va.; S. W. Meals, president, Carnegie Natural Gas Co., Pittsburgh, Pa., and F. J. Huffman, vice president, South Penn Oil Co., Pittsburgh, Pa.

7:00 p.m., annual stag dinner, William Penn Hotel.

Friday, June 5, 9:30 a.m., presiding: J. C. Askam, Ohio Oil Co., Findlay, Ohio.

"Repressuring Limestone Producing Areas in Kentucky," by N. M. Wilder, Kentucky Department of Mines and Minerals, University of Kentucky, Lexington, Ky. Discussion by: C. B. McClintock, geologist and petroleum engineer, Oil City, Pa.; Paul D. Torrey, geologist, Sloan & Zook Companies, Bradford, Pa.; Sam J. Brendel, president, Brendel Oil & Gas Co., Pittsburgh, Pa.; Jack Gaddess, geologist, Allegheny Gas Co., Port Allegheny, Pa.; Don J. Wilson, vice president, Columbia Gas & Electric Co., Pittsburgh, Pa.; J. C. Askam, petroleum engineer, Ohio Oil Co., Findlay, Ohio, and D. S. Keenan, Kentucky-West Virginia Gas Co., Ashland, Ky.

"Gas Measurements," by Thomas R. Weymouth, vice president, Columbia Gas & Electric Co., Pittsburgh, Pa.

1:30 p.m., presiding: J. H. Newlon, superintendent of production, Equitable Gas Co., Pittsburgh, Pa.

"Production and Production Problems in Michigan," by W. M. Peck, assistant general manager, Pure Oil Co., Saginaw, Mich. Discussion by: R. B. Newcombe, Associated Petroleum Co., Mount Pleasant, Mich.; Howard D. Atha, president, Gordon Oil Co., Mount Pleasant, Mich., and George Myers, Sun Oil Co., Toledo, Ohio.

"Petroleum Geology of Ohio," by Wilber Stout, state geologist, Geological Survey of Ohio, Columbus, Ohio. Discussion by J. J. Schmidt, East Ohio Gas Co., Cleveland, Ohio, and W. L. McCloy, vice president and general manager, Ohio Fuel Co., Columbus, Ohio.

Report of Nominating Committee and Annual Election of Officers.

The meeting will be in charge of the following committees:

Program Committee: J. C. Askam, chairman, Ohio Oil Co., Findlay, Ohio; George Wittmer III, Wittmer Oil & Gas Co., Pittsburgh, Pa.; J. H. Newlon, Philadelphia Co., Pittsburgh, Pa.

Attendance: George Wittmer III, chairman, Wittmer Oil & Gas Co., Pittsburgh, Pa.

Arrangements: Fred Benkert, chairman, Peoples Natural Gas Co., Pittsburgh, Pa.

Registration: F. E. Eckert, chairman, Hanley & Bird, Bradford, Pa.

The Eastern District officers (1935-1936) are: H. H. Phillips, chairman, Phillips Drilling Co., Butler, Pa.; J. C. Askam, vice chairman, Ohio Oil Co., Findlay, Ohio; F. E. Eckert, vice chairman, Hanley & Bird, Bradford, Pa.; G. L. Hassler, vice chairman, Pennsylvania State College, State College, Pa.; George Wittmer III, vice chairman, Wittmer Oil & Gas Co., Pittsburgh, Pa.; Fred Benkert, secretary-treasurer, Peoples Natural Gas Co., Pittsburgh, Pa.

Byles Tells Texas Bankers Oil Problem Must Be Solved

HOUSTON, Tex., May 25.—Addressing the bankers of Texas, in convention at the Rice Hotel, President Axtell J. Byles of the American Petroleum Institute said the solution of the oil problem lies in true conservation and regulation by compact between the oil states. He praised the work of the Texas Railroad Commission and said he thought Col. E. O. Thompson, its chairman, "had done almost heroic work."

He declared that the Rodessa situation cannot go on.

"Think of it, 13 wells on one 120-acre lease being permitted to run 1,500 bbls. each while all others around are permitted only 350 bbls.," he exclaimed. "It is inequitable. One way or another, this problem must be solved. Men won't stand around and take that sort of punishment."

He said cooperation is the way out.

"And what is the vehicle of cooperation?" he asked. "It is the Interstate Oil Compact. California and Louisiana and all the oil states should sit around a board and solve in a friendly and intelligent manner the oil problem. This is the democratic way, not the autocratic way of doing it.

"The more I see of our constitution the more I am convinced that not one clause was put in that great document by guess. Here in the oil emergency, the compact between the oil states fills that twilight zone between federal and state functions.

"And so I say Louisiana must help solve this problem. Oil men do not live unto themselves alone.

"Future oil fields must be drilled on a cooperative basis—it is the best way to serve the industry and the public."

Before adjourning the Texas Bankers Association adopted without debate a resolution suggesting a cooperative effort with the Louisiana Bankers Association to solve the troublesome Rodessa problem. The resolution was submitted by the petroleum committee of the Texas Bankers Association, signed by Tucker Royall of Palestine and Dallas as chairman and A. D. Simpson of Houston.

Most Stripper Wells Are Still in Red Declares President William Bell

Most stripper wells are still in the red and higher prices for crude oil are necessary before owners of these properties will be justified in making expenditures to improve their operations, according to William Bell of Robinson, Ill., who as president opened the annual meeting of the National Stripper Well Association held in Tulsa May 22. Mr. Bell said that his contention that stripper well operations generally were still unprofitable took into consideration the legitimate costs of producing oil, including depletion, depreciation, amortization and intangible development costs and interest.

"While these items go on the books of stripper well producers and should, of course, be set aside, it has not been possible during their long lean period to keep these amounts in reserve," Mr. Bell said, "because the stripper well producers have been obliged to use these funds to keep their wells going and to pay their labor living wages, even though we have exercised every possible belt-tightening move including, unfortunately, the premature abandonment of a large number of small wells, representing large reserves."

William Bell and T. B. Steele, of National Stripper Well Association

Mr. Bell called on the membership to support the efforts of the states and operators in flush fields to maintain production in line with demand and prevent a general lowering of crude price schedules.

C. F. Roeser, president of the Independent Petroleum Association of America and an owner of stripper production in Texas, agreed with Mr. Bell that present prices for crude oil were too low but at the same time warned the owners of the small producing wells that they could not expect a return of the high prices of the early twenties. He said that operators must take advantage of the new methods of increasing the production of settled wells and thus reduce their per barrel operating costs. In regard to prices, he indicated that in his opinion the oil industry should stabilize crude schedules around $1.65 per barrel for average grade Mid-Continent crude oil. He said that at $2 per barrel coal became competitive with oil in the manufacture of certain products.

H. B. Fell of Tulsa, executive vice president of the association, read a report covering the activities of the association. A large part of the executive staff's work has been concerned with suggested state and federal legislation which if enacted into laws would be especially burdensome of owners of stripper well properties. All the officers of the association including T. B. Steele, Robinson, secretary and treasurer, were reelected.

Economics of Oil Producing Practice

By C. H. LIEB
President Carter Oil Co.

SUMMARY

Summarizing, there are several important problems for the oil industry, and particularly the technical people within the industry, to perfect as rapidly as possible:

1. Universal adoption of wider spacing adapted to the peculiarities of each pool, unitization, and pressure maintenance as standard operating practices.

2. Education of public officials and the public indirectly interested in the oil business to the end that under the police power, the law of capture shall be so modified, certainly as to permit, and whenever possible so as to compel, the drilling and producing practices that are here advocated.

3. Persistent and consistent efforts on the part of the industry to improve operating efficiency and achieve lower costs and wider margin of profit on about the existing price levels for crude and products.

4. A better standard of professional ethics among the engineers and other technical people engaged in the oil business, and education of the executives as to the benefits from the practices advocated.

5. Establishing proration on a more scientific basis. Basing allowables on well potentials or flat rates per well is thoroughly unsound from scientific or economic viewpoints. My opinion is that proration should be the allowable per well coincident with a rate of withdrawal utilizing the reservoir energy, to the greatest degree of efficiency. If the technologists in the industry can agree upon a uniformly accurate method of estimating reserves, perhaps allowables could be a factor of reserves.

***A.I.M.E.*—Presented before the Mid-Continent Section, Petroleum Division, Tulsa.**

One astounding fact in the production of petroleum is the comparatively recent realization by producers that flowing production is the cheapest crude produced. Actually, about 1910 or later, operators endeavored to get a producing well to pumping as quickly as possible after completion. A well was not really considered to be completed until it was operating on the pump. Remarkable progress has been made, and it is most interesting to trace the developments in producing practice. It was not until about 1920 that producers began to take a serious interest in pressures and to begin to think a little about proper methods of handling oil wells. Pressure gauges were installed, and records were maintained of these pressures, which was quite an innovation at that time. There were desultory experiments with tubing of different sizes, as well as experiments with placing the bottom of the tubing string at different levels in the well. Probably the first important departure from customary procedure was about 1926, during the Seminole development, when gas lift and air lift were introduced and widely used. This was a practice of utilizing air or gas under pressure, transmitted either through the tubing or between the tubing and casing strings, to lift the oil rather than utilizing a string of rods to actuate a pump at or near the bottom of the hole. As a consequence, large quantities of crude oil were produced by air and gas lift, at a lower cost per barrel than could have been possible with other methods employed up to that time.

This departure in producing practice definitely placed the engineer in the producing organizations. The engineer was in a position recently created, analogous to the acceptance of geologists in the oil business about 10 years previous. The engineer grasped the opportunity, and many developments took place rapidly, as a consequence. Drilling machinery was improved and tubular goods were perfected, both of which aided in deeper drilling being accomplished. Surface equipment for producing wells was redesigned, new equipment was brought out, and the entire industry became conscious of the engineer in the business.

C. H. LIEB

We have indicated the year 1926 as marking the real beginning of drilling and producing technology. After about that date, engineers studied more intensively the problems of the oil business and their recommendations were received more readily and put into effect. However, no startling discoveries of engineering principles at that time accounted for this acceptance of engineers and their work in the business. There had been a slowly effective educational process leading to this acceptance. Lewis, then with the Bureau of Mines, began his studies for the more efficient recovery of oil in 1915, and the Bulletin of the Bureau embracing his conclusions was issued as early as 1917. The two important findings embraced in the Bulletin were these: (1) The function of gas dissolved in the oil was fully appreciated and clearly pointed out. (2) For ultimate recovery, he not only urged repressuring, but the maintenance of pressure. Henry Doherty completed his laboratory experiments in relation to the function of dissolved gases in 1922; sold the idea to George Otis Smith, of the Survey, and the two together prevailed upon President Coolidge to appoint his Federal Oil Conservation Board in 1924, where the extravagant waste of reservoir energy was the occasion of the appointment, and, among the data he had before him, was the release of oil in solution by the practices then prevailing.

About 1926, talent was seriously devoted to improvement of producing practices by commercial organizations. Studies were inaugurated on the occurrence of oil in reservoirs, the function of free and dissolved gases as propulsive powers, and consideration was given to the spacing of the wells. The man on the lease first began to include "gas-oil ratio" in his vocabulary. It was a few years later before we began generally to discuss bottom hole pressures. With respect to practices applied to the production of oil, there was first an adaptation of the gas lift which was applied intermittently, and known as intermittent gas or air lift. It was at about this stage that some thought was growing that reservoir pressures might be maintained and all of the recoverable oil expelled by pressure existing or created in the reservoir. Consequently, we have experiments and actual application of maintenance of pressure and repressuring. Probably the most advanced engineering thought in the oil producing business today is the possibility of attaining recovery of all the oil in a reservoir by use of the energy inherent in that reservoir without the addition of any power from outside sources. To achieve this ultimate objective as closely as possible, experiments are constantly under way on efficient rates of withdrawal, analytical studies of the composition of the fluid and gases in the natural state in the reservoir, and other studies, all pointing towards the maximum recovery of crude oil with the minimum expenditure for power. The perfect example of complete recovery of the crude in a reservoir without addition of energy from outside sources will likely never be achieved. Nevertheless, to the extent that perfection is approached, we have lower cost production.

Simultaneously with the development of practices which have been outlined was the growing realization that the crude could be stored in its natural reservoir and withdrawn as required far more economically than if produced at maximum rates, as previously had been done, and stored in steel tankage above ground. The fire hazards were practically eliminated; evaporation and expense of maintaining enormous steel reservoirs were reduced to the vanishing point. Previously, every new oil field was a race between the driller and the tank builder.

Contemporaneous with these developments were the legal procedures necessary to make reduced withdrawals effective and fairly applied. This general procedure brought in state governmental agencies and the practice has come to be referred to as "proration." Proration, today, signifies merely a restraint upon production, and it is far from being in its most desirable form. Theoretically, proration should be synonymous with efficient producing practice as applied to any pool. Largely, however, because the administration is in political bodies, it is subject to political exigencies and consequently is a compromise which leaves much to be desired. Proration was first conceived as an implement to balance "supply and demand." It is still so regarded by many people and without critical attention to efficient rate of production. The underlying purpose should be to permit each well to produce that proportion of oil that will best conserve reservoir energy and lead to the largest ultimate recovery from the pool. That, in my opinion, is true conservation. That affords petroleum engineers their widest field of usefulness and affords state regulatory officials their greatest opportunity to function for the benefit of the public interest. Some lawyers, ranking high in their profession and singularly experienced in this field, are of the opinion that this efficient rate of production can be imposed under the existing statutes at least of some oil states. The two specific

instances in Oklahoma most nearly approaching proation on the true principle are Keokuk and South Burbank fields. Operators and state officials charged with conservation responsibilities should regard "proration" as the efficient producing rate. Proration should not be regarded as a method to secure some advantage by using political influence, neither should it be administered by "catch as catch can" methods or by juggling wholly uncomparable figures and arbitrarily writing up the allowable in one field by 500 bbls. and writing down another field by 1,000 bbls. If proration shall be based on the efficient rate of withdrawal, the matter of price is not a factor of importance, if at all, in the fair distribution of crude to be produced. At present, operators and officials charged with the administration of state conservation laws are conscious of the price element affecting allowables, and frequently there are questions of inequities and discrimination. Proper bases for proration as we advocate would eliminate these annoying, wasteful, and costly aspects now in the situation and achieve true conservation that is highly in the public interest. The industry, the state officials, and indirectly the consuming public must choose whether they wish true conservation of a valuable, exhaustible natural resource and efficient producing operations and reasonable prices for crude and products, or whether they want discriminatory tactics, extravagant and inefficient operators and higher prices.

Progress Made

Even a very brief outline of the developments of oil producing practices indicates clearly that very substantial progress has been made. The financial condition of producing companies in relation to crude prices proves the point. The average posted prices for 36 degree gravity Mid-Continent crude for five-year periods from 1915 to the end of 1935 are as follows:

Average
1916-1920 incl., $2.20; High 1920, $3.42; Low 1916, $1.26
1921-1925 incl., $1.68; High 1925, $1.89; Low 1923, $1.55
1926-1930 incl., $1.48; High 1926, $2.13; Low 1930, $1.23
1931-1935 incl., $0.83; High 1934-5, $1.00; Low 1931, $0.63

In 1927, the earnings of six representative companies depending substantially upon crude production aggregated $62,000,000; the earnings of the same six companies in 1935 were $59,600,000, approximately. In 1927, the price of 36 degree gravity crude averaged for the year $1.30, whereas the price of the same crude in 1935 was $1 per barrel. The earnings of these representative companies were only 4 per cent less in 1935 than in 1927, while the average crude price was 30 per cent higher in 1927 than in 1935. We believe that this is a fair representation. Producing companies were on a profitable basis during 1935, when a price of $1 per barrel prevailed for 36 degree gravity crude. A few years ago, producing companies could not have survived on a price of crude as low as $1 per barrel. The fact that a profit is possible today is entirely due to the greater efficiency and lower costs of production. Further improvements in the profit margin will not be realized unless a higher crude price prevails or unless greater efficiency is secured in producing practice. A large part of the benefits derived from efficient operations has been passed on to the public in the form of lower prices for gasoline and other products. This fact definitely proves, in our opinion, that the public interest has been considered and has permitted wider enjoyment of the benefits to be derived from the use of petroleum products. It is our opinion that a price very much or any higher than the present crude price not only cannot be anticipated by any logical analyses, but would be detrimental to the business from a long-range viewpoint. We believe that the margin of profit to the producer can be materially improved by wider adoption of advanced producing practices. Such a policy generally adopted by the oil industry will not necessitate increasing prices of the products of this industry to the public and should create a wider use and a consistently increasing volume that cannot otherwise be achieved. Producers demanding higher crude prices must admit inefficient operations. Also, higher prices place a premium on indolence and carelessness.

There are a few striking examples that might be cited as to the manner in which the petroleum industry can save very substantial amounts. Seeking a larger income from higher prices of crude and products is simply taking the easiest route for profit in the industry. The same profit can be achieved by acceptance of proven engineering principles and the application of proven practices. Let us look at the cost of development of a field on a wider spacing pattern. The Lucien field, in Noble County, Oklahoma, furnishes a good illustration. This pool was discovered September 29, 1932. It was contemplated to be developed on a pattern of one well to 40 acres. This has not been fully attained, and the development at present averages one well to 38 acres. The average cost for drilling and completing a well in this field is approximately $57,000, and the average total depth is about 5,200 feet. To May 1, 1936, there has been recovered from this field 9,172,591 bbls. of oil. It is estimated that, as of May 1, 1936, this field shows an operating profit of practically $4,000,000. Using the same basic figures for estimation, if this field had been developed on a 10-acre spacing program, there would still be an unreturned investment covering development and operating exceeding $9,000,000. In other words, this field paid out development in about three years, whereas if it had been developed on 10-acre spacing, there would still remain a very heavy investment, which it is equestionable would ever be paid out.

It is not proposed that 40-acre spacing, or any other spacing pattern, should be the universal rule. We propose, however, that each field should be developed on the pattern that is best adapted to the conditions and characteristics of that pool. The ideal condition might be conceivably, an irregular spacing pattern, but such a plan is most difficult to put into effect, if not impossible, because of property ownerships prevailing in most likely territory in the United States. There are many arguments advanced against wider spacing, and probably some of these are sincerely presented. However, it is difficult to understand the position taken by some companies and some individuals. Probably what really accounts for the opposition to wider spacing is yielding of conviction on the part of the engineers or a lack of understanding and vision on the part of engineers and executives. It is an expression of a philosophy of a temporary advantage without regard for the long-range view. Often, too, lawyers lacking in progressiveness and with antique notions of the law are obstacles.

Proper Spacing

We agree that a pool, where the depth of the wells might be 500 feet, may not economically justify 40-acre spacing. Perhaps in such a pool, the wells should be spaced one to five acres, or some other high degree of density. The thickness of the producing formation, the degree of porosity and permeability, the reservoir pressure, the amount of free and dissolved gases are all factors that should be considered in determining the density of wells in any field. We challenge anyone, however, to refute the fact that more money will be made by all parties interested in the production of wells having a depth of 6,000 feet and below (within the usual ranges of characteristics) if the wells are spaced more widely than one to 10 acres, than if the field is developed on a pattern of one well to 10 acres or less. Economic spacing of wells has been defined clearly as: "That unless an added well seems likely to yield sufficient additional net income to permit a fair margin of profit, its drilling must be considered uneconomic."[1] It has been stated authoritatively and not refuted that close spacing of wells is often detrimental to ultimate yield because close spacing leads to and harmonizes with inefficient and improper use of reservoir energy.[2]

Conditions vary in each pool and selectivity of producing practice must be applied the same as proper selection of a pattern for development. In pools where there is a fairly active water drive, a rate of withdrawal can be ascertained that will be highly efficient. If the withdrawal is at such a rate that the reservoir pressure is approximately maintained, it is possible that little, if any, outside power will be required to produce all of the recoverable oil, and huge investments consequently saved. While not accurately familiar with the East Texas field, it is believed that the consensus of opinion of engineers familiar with this operation is that the rate of withdrawal in this field should not be increased above what it is at present, which is 450,000 bbls. per day approximately. It is the opinion, I believe, that any higher rate will permit the water drive to lag, with the consequent rapid decline in pressures and the necessity to resort to artificial lift at an early date. There are about 20,000 wells in East Texas and assuming a

(Continued on Page 99)

[1] "Economic Spacing of Oil Wells," by M. G. Cheney. Bulletin of the American Association of Petroleum Geologists, Volume 19, No. 6, June, 1935.
[2] John R. Suman, "The Well Spacing Problem: Low Well Density Increases Ultimate Recovery." Oil Weekly, May 28, 1934.

OBITUARY

WILLIAM A. DONNELLY, 38, manager of the wholesale department of the southern sales department of the Mid-Continent Petroleum Corp., died May 22 in a Tulsa hospital.

JOSEPH WARREN REESER, 66, Huntington, W. Va., superintendent of distribution for the United Fuel Gas Co., died May 18. He was born at New Ringold, Pa., July 28, 1869, son of John F. and Elizabeth Mintzer Reeser. After engaging in railroad construction for more than 12 years, in his late twenties went to West Virginia to assist in construction of a 20-inch gas main to Cincinnati, Ohio. In 1899 he opened, as agent, the first gas office in Ashland, Ky., and in 1900 was sent to Connellsville, Pa., as superintendent of Fayette County Gas Co. where he remained until 1907, when he was transferred to Johnstown, Pa., to supervise piping of gas into the city and act as general superintendent. That work completed, he was transferred to Cincinnati, Ohio, as superintendent of distribution in 1908. On Thanksgiving Day, 1909, when Columbia Gas & Electric Corp. took over United Fuel Gas Co., he was transferred to Huntington, W. Va., as general superintendent of the latter company, and later was made superintendent of distribution of all districts in the Charleston group operating in West Virginia, Kentucky, and Ohio. Mr. Reeser was the father of W. M. Reeser, district manager of the Amere Gas Utilities Co., of Beckley, W. Va., and Edwin B. Reeser, president, Barnsdall Oil Corp., of Tulsa.

ROY G. CULLEN, 30, secretary-treasurer of the Quintana Petroleum Co., Houston, died at Edenburg, Tex., from injuries received in the oil field. He was the son of Mr. and Mrs. H. R. Cullen of Houston, his father being president of Quintana.

A. J. AYRES, landowner in the Saxet Heights field, Nueces County, Texas, died in Corpus Christi of burns suffered when a well on his property caught fire. His home and much surrounding property was destroyed and his son, A. J. Ayres, Jr., and John Bartlett, operator of the well, were seriously injured.

ARTHUR CAMPBELL JAMISON, 56, production superintendent for Arkansas Fuel Oil Co., Shreveport, La., died May 21. He had been in the producing end since 1893 when he started working in Butler County, Pa. In 1901, he joined the South Penn Oil Co. in West Virginia and served in the production division for 20 years. He joined Arkansas Natural Gas Corp. during the Homer, La., boom and was field superintendent at Homer, El Dorado, Ark., Haynesville, La., and Mexia, Tex. He was placed in charge of drilling tools for three states in 1928 and became production superintendent in 1933.

M. J. KIRSCHNER, 87, at one time district superintendent of South Penn Oil Co., died in Monrovia, Calif., last week. A native of Erie, Pa., he went to the oil region in 1866 as a pumper along Oil Creek. Shortly afterward he was placed in charge of the construction of the Payne & McCrea pipe line. In 1872 he entered the Clarion County, Pennsylvania, field as a producer, and in 1881 became a dealer and broker on the Oil City oil exchange. In 1886 he entered the employ of Ohio Oil Co., in the Lima, Ohio, field and was transferred to the Ohio Fuel Oil Co. at Cleveland. Returning to Oil City in 1890, he entered the service of South Penn Oil Co.

Old Timers of Industry and of Tulsa Are Honored at Special Ceremony

Martin H. Mosier of Los Angeles, Cal., was acclaimed the "Grand Old Man of the Petroleum Industry" at a special ceremony honoring veterans of the industry on the International Petroleum Exposition grounds last Thursday. W. J. Stewart was designated as the "Grand Old Man of Tulsa," and William H. Peiffer, of Carthage, Mo., was the "Pioneer of Pioneers", or oldest man registered. They were presented with gold, engraved medals awarded by the exposition. Other veteran oil men were awarded gold lapel buttons.

Mr. Mosier has spent 60 years in the oil industry. He was born in Western Pennsylvania, June 21, 1856, and at 20 years began his career as a well pumper at Petrolia, Butler County, Pa., in April, 1876, and has followed the business continuously since, working throughout the oil states from Bolivar, N. Y., to the Pacific Coast. He made a special study of natural gas; became superintendent of the Bradford Gas Light & Heating Co., and was one of the builders of the first natural gas pumping station in 1881. In 1905 he moved to Oklahoma and Tulsa, where he became an oil operator. His first well was the second completed in the Glenn pool, He moved to California in 1911 and became an active operator on the Pacific Coast. He retained an office in Tulsa, and today has producing properties in Oklahoma, Texas, Ohio and California.

Mr. Stewart, also, is a native of Pennsylvania, born at Bruin, Butler County, Pa., July 12, 1860. He has been active in oil work since a small boy, having helped his stepfather as a pumper and in general oil field work as early as 1870. He served his apprenticeship under his stepfather until 1877, when he went to work for C. W. Atkins as a roustabout, with pay, on the Chapman-Buzzell lease in McKean County, Pa. He continued to work in the Pennsylvania fields, operating part of the time as an independent, until 1899, when he entered the Sistersville, W. Va., field as one of the organizers of the Melrose Oil Co. He drilled many wells in that area. He came to Tulsa in 1907, entered the service of the Devonian Oil Co., and still is with that company.

Mr. Peiffer took up oil work first and is older than Mr. Mosier or Mr Stewart, but, unlike them, did not remain in the industry. He, too, is a Pennsylvania native, born at Meadville, July 23, 1843. He served with the Pennsylvania troops in the Civil War, beginning his oil work after the war. His first job was as rig builder and driller on Stephenson Hill, in the Petroleum Center area near Titusville, Pa., in 1866. For 16 years he worked as a driller in the Church Run area, Foster Hill, at Oil City, and in the Clairion and Butler County fields of Pennsylvania. He moved with his family to Missouri in 1882 and has not since been active in oil work.

He was not the only 93-year-old man to register at the exposition. A. W. Gordon, of Tulsa, also is 93 and was registered, but was chosen "Pioneer of Pioneers" at the previous exposition.

Presentations of the medals were made by Charles F. Roeser, president of the Independent Petroleum Association of America; W. G. Skelly, president of the International Petroleum Exposition, and H. R. Gruber, of the Union Wire Rope Corp., chairman of the historical committee which selected the winners. Victor F. Barnett, of the Tulsa Tribune, was general chairman of the Old Timers Committee and presided at the presentation ceremony.

Selection of the grand old men this year was entrusted to a general Old Timers committee. President Skelly and Manager W. B. Way of the exposition appointed Victor F. Barnett general chairman. Mr. Barnett and members of the general committee in turn appointed the subcommittee. One of these was the historical committee, headed by Hal F. Gruber, and including J. Edgar Pew, James Flanagan, John McGoldrick, James McIntyre, C. L. McMahon and B. M. Gessel. The historical committee selected the grand old men for 1936 after careful consideration of many candidates who were nominated. Other subcommittees included entertainment, publicity, memorial plans and registration. The memorial committee, headed by Glenver McConnell, began plans for a permanent memorial to be erected in honor of the pioneers of the industry at some future date.

Left to right: W. J. Stewart, "Grand Old Man of Tulsa"; M. H. Mosier, "Grand Old Man of the Petroleum Industry," and President W. G. Skelly, International Petroleum Exposition

Hearings on Import Tax End Before House Committee

WASHINGTON, D. C., May 25.—Hearings on the Disney import limitation and excise tax on imports bill have been concluded by the House Ways and Means Committee. Evidence was submitted by Russell Brown, general counsel of the Independent Petroleum Association of America, claiming imports of crude and refined products were rapidly mounting and that if the trend continued it would be only a matter of time until the price schedule for petroleum and petroleum products again became demoralized.

Mr. Brown intimated this break in prices might come shortly after congress adjourns next month. It is his opinion, he told the committee, that one of the forces which accounts for the present good position of the petroleum industry is the fear by some parts of the industry of federal legislation unless the industry remains stabilized.

The principal reasons for the enactment of this bill by congress, as given by Mr. Brown, are that it will not increase materially the cost of oil products; will raise revenue; will assist the states and the industry in making effective their programs of conservation; will result in more employment; and will add to the national wealth by promoting exploration and discovery work in the industry.

John Battle, executive secretary of the National Coal Association, told the committee passage of this bill would result in the coal industry taking over some of the markets now being supplied with imported fuel oil. It was also his contention the effect of this legislation would be increased prices and the placing of coal on a better competitive basis with oil.

Indications are the Ways and Means Committee is likely to split along political lines when this bill is considered in executive session. Opposition to the consideration of the bill was voiced by several Democrats on the committee, while the Republican members generally seemed friendly to its favorable report by the committee. As there are only 7 Republican members on the committee out of a membership of 25, and only a very few Democrats are expected to follow their lead, the chances of the bill being taken up by the house appears remote.

However, with the Senate Finance Committee casting around for some means of raising the amount of revenue asked for by President Roosevelt in his tax message, and not being desirous of following the suggestions of the house in the bill passed some time ago, the committee is considering embodying the provisions of this bill in the tax bill when it is in final form.

F. R. Clark Bereaved

Theresa Louise Clark, 52, wife of Frank R. Clark, chief geologist for Marathon Oil Co., passed away during the night of May 25. Mrs. Clark was born in Salt Lake City and was a graduate of University of Utah.

Natural Gas News

Peoples-Columbia Merger

PITTSBURGH, Pa., May 25.—Officials of the Peoples Natural Gas Co. outlined a proposal before Public Service Commissioner Thomas M. Buchanan for a merger with Columbia Natural Gas.

J. French Robinson, president of Peoples Gas, said all outstanding stock of the Columbia is owned by Peoples. Combining operations would provide greater flexibility in operation and production, economies and better service.

Three applications were filed with the commission:

By Peoples Gas, for approval of a charter amendment to extend territory for production and supply and the general route of its pipe lines.

By Columbia, for approval of the transfer and assignment of all its property and assets to the Peoples.

By Peoples, for approval of the transfer of $3,231,638 from its reserve for depreciation of structures and equipment to its unappropriated surplus account.

S.E.C. Gas Rules

WASHINGTON, D. C., May 25.—Modification of its rules defining gas utility companies has been announced by the Securities and Exchange Commission. Text of the commission's rule follows:

Companies declared not to be gas utility companies:

(A) No company which operates facilities used for the distribution at retail of natural or manufactured gas for heat, light or power, shall be deemed to be a gas utility company within the meaning of Section 2 (A) (4) if,

(1) It is primarily engaged in one or more businesses other than the business of a gas utility company, and

(2) Its gross revenues during its last fiscal year from sales of natural or manufactured gas distributed by it at retail (other than gas distributed in enclosed portable containers or distributed to tenants or employes of such company for their own use and not for resale) did not exceed $100,000, or its gross revenues from such sales during the 12-month period ended September 30, 1935, did not exceed such amount;

Provided, however, that if any company, even though primarily engaged in one or more businesses other than the business of a gas utility company, shall, in the course of any fiscal year ending after January 1, 1936, receive gross revenues of $100,000 from sales of natural or manufactured gas at retail, it shall thereupon be deemed to become a gas utility company within the meaning of Section 2 (A) (4) unless the commission shall otherwise by order declare.

(B) In any case in which a company owns but does not operate such facilities, such owner shall not be deemed to be a gas utility company merely because of such ownership unless the company operating such facilities is a gas utility company.

(C) Gas sold for resale (otherwise than for resale to tenants or employes of the purchaser) or to industrial consumers for their own use shall not be deemed to be distributed "at retail" within the meaning of this rule and of Section 2 (A) (4).

Dilution Suit Delay

FORT WORTH, Tex., May 25.—Trial of the dilution suit brought against Lone Star Gas Co. by Gas Consumers Association will not take place before September or October. The case has been transferred from Tarrant County to the Forty-third District Court in Weatherford by Judge Walter L. Morris on suggestion by company attorneys.

Trial of the case on its merits will not be possible until the September term of court in Weatherford, although by agreement of both sides hearings on a pending demurrer may be held meanwhile.

The change of venue was allowed by Judge Morris after the gas company pointed out there are approximately 35,000 gas consumers in Tarrant County who have a direct interest in the case.

The suit was brought by 32 members of the Gas Consumers Association who charge that, since 1924, the company has diluted its product with inert and noncombustible gases. They set out that since 1924 consumers have paid $25,800,000 to the gas company. They seek a return of 18 per cent on the ground that no consideration was received.

Alberta Gas Waste

EDMONTON, Alberta, May 25.—The annual report of the Alberta lands and mines department estimates that between 1925 and 1935 a total of 614,050,000,000 feet of gas was wasted in Turner Valley. The total withdrawal in the same period is placed at 717,110,000,000 feet, of which 103,060,000,000 feet were used commercially.

The report states that if the gas wasted in these 10 years could have been conserved instead of being burned after the naphtha was extracted, the withdrawals would have met the entire gas demand of Alberta for 58 years, except fuel used for drilling. If used only for the Calgary-Lethbridge system they would have lasted 100 years.

"As things stand, it is difficult to say how long the Calgary-Lethbridge system will be able to obtain a supply of gas from Turner Valley," the report continues. "A part of the field has been closed in and this section will make gas available for some time longer than would otherwise be the case."

The report points out that the gas pressure in Bow Island dropped from 745 pounds when the field was first drawn on in 1912 to 218 pounds.

C. E. Parker Promoted

SHREVEPORT, La., May 25.—D. W. Harris, vice president and general manager of the Arkansas Natural Gas Corp., announced appointment of Charles E. Parker of the purchasing department to succeed L. E. Smith, resigned. Mr. Parker became affiliated with Empire Oil & Gas Co., at Bartlesville, Okla., in 1919, in the purchasing and warehouse departments. In 1926 he was transferred to El Dorado, Ark., to the purchasing department, where he remained until 1928, when he moved to Shreveport.

Kansas-Nebraska Line

TOPEKA, Kans., May 25.—The Kansas Pipe Line & Gas Co. has been granted authority by the Kansas Corporation Commission for construction of a gas pipe line from Rush County into Nebraska. The line will start at the gas field near Otis and wil serve a large number of towns in western Nebraska. The company proposes as soon as the lines can be constructed it will extend the line so that most of the cities in northwestern Kansas will be supplied with gas.

Natural Gasoline

Glen Rose Plant Building

RODESSA, La., May 23.—The Glen Rose Gasoline Co.'s new stripping plant in the Rodessa pool of Caddo Parish, Louisiana, is projected for completion by July 1. The plant of 25,000 gallons daily capacity is being constructed under supervision of Paul M. Raigorski, of Tulsa, of the Petroleum Engineers, Inc., firm.

The Glen Rose Gasoline Co., organized by Mr. Raigorsky, John A. Thompson and Ralph A. Bristol of Fort Worth, and M. H. Marr and D. L. Perkins of Shreveport, has consummated a long-term contract with Hanlon-Buchanan Gasoline Co. of Tulsa for disposal of its new plant's production. Messrs. Thompson, Bristol, Marr and Perkins are the joint owners of the W. J. Hunter 40-acre lease in section 13-16-23, on which five producers have been completed.

For the present, the Glen Rose company's plant will process only gas from the Hunter lease's five wells, but may be expanded later to utilize gas produced from neighboring properties which is now being dissipated by burning through flares.

Deep Pay in Cement Field

The first deep producing pay to be found in the Cement field of southeastern Caddo County was uncovered Monday by Marathon Oil Co. No. 4 Marchand, SW SE NW section 2-5-9w, which showed for a good producer in a deep sand at 6,367 feet. The well cleaned itself late Monday. It was bailed down to about 1,500 feet when gas started breaking through. The well was shut in for tankage after the gas forced all mud and water from the hole. When opened it tested 500 bbls. per day and 8,000,000 feet of gas. The oil is 30 degrees gravity, green in color and believed to have a good lubricating base.

Older wells in the field have been producing from Permian formations, including four oil zones and three gas zones, ranging in depth from 1,450 to 2,800 feet. Operators have been seeking a deeper pay for several years, and some of the earlier tests had good shows of oil. The new producing formation had not been identified, but it was thought to be in the Pennsylvanian series.

DISCUSSING OKLAHOMA CITY PIPE LINE WORK

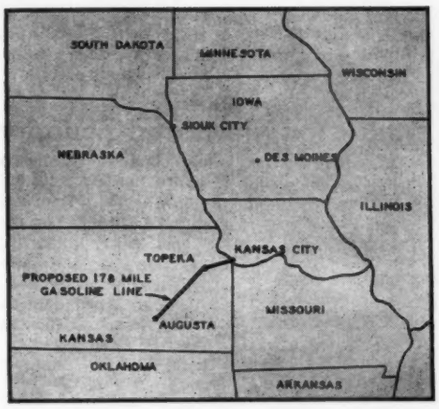
G. S. Connor, superintendent and D. R. Williams, vice president, Williams Brothers; Tom Smith, inspector for Phillips Petroleum Co.; A. M. Garber, superintendent for Williams Brothers, and C. Napps

Pipe Line Activity

White Eagle Gasoline Line

The White Eagle division of the Socony-Vacuum Oil Co., Inc., will lay a 178-mile 6-inch gasoline pipe line from its 15,000-bbl. refinery at Augusta, Kans., to water terminal facilities in Kansas City via Topeka, where tank truck loading facilities will be installed.

This move is significant in that the company recognizes the growing importance of gasoline pipe lines as a more economical means of reaching the northern markets from the Mid-Continent refining area, and also is taking cognizance of the potential future importance of water transportation within the Middle West.



Route of Socony-Vacuum, White Eagle Division gasoline pipe line and market territory it will serve

In locating water terminal facilities at Kansas City, the company will be a position to utilize the Missouri River for barging refined oils as far north as Sioux City, Iowa, as soon as the present federal government's work of dredging the river to that point is completed.

From Sioux City it will be possible to reach into Nebraska, Minnesota, Iowa and Wisconsin more economically and while the announcement made by the company does not carry the suggestion, it will be possible to barge material down the Missouri River to the Mississippi and not only reach the principal Mississippi ports but also points along the Ohio. White Eagle also operates a 5,000-bbl. refinery at Casper, Wyo.

Students of the market and transportation facilities in the Middle West have pointed out the excess transportation capacity afforded the company by the latter's installing a 6-inch line since the company's present crude refining capacity at Augusta is only 15,000 bbls. daily. Either White Eagle will see fit to increase the output of its present plant and expand its markets or will be in a position to transport the products of other refiners in the territory. The ultimate answer to that problem must also take into consideration the Socony-Vacuum refinery at East St. Louis operating under the Lubrite division.

To offer some idea of the existing competitive rail tariffs as an index of the savings to be effected by laying the pipe line to Kansas City the following table was prepared

RELATIVE FREIGHT RATES ON GASOLINE

From	To	Cents per cwt.
Kansas City	Des Moines	25
Augusta	Des Moines	30½
Tulsa	Des Moines	34
Augusta	Kansas City	19½
Tulsa	Kansas City	26½
Kansas City	Minneapolis	36
Chicago	Minneapolis	30½

Talco Gathering Lines

DALLAS, Tex., May 25.—E. G. Germany, president of C. & G. Oil Co. and Independent Pipe Line Co., Dallas, announces the pipe line company plans to lay a gathering system in the new Paluxy sand pool at Talco in northeast Franklin County and northwest Titus County. Harold Byrd and Jack Frost, of Byrd-Frost, Inc., Dallas, are interested with Mr. Germany. A loading rack is being erected on the Paris & Mount Pleasant Railway, a short distance southeast of Talco, this rack to accommodate 10 cars at present and be tied into by the gathering system. It will make the second line to serve the field, one gathering line laid by Pleasant Oil Co., connecting to a loading rack at Talco, being operated to carry out the oil to rack and by tank-car to the Gulf Coast.

Humble Pipe Line Co. is also considering laying an outlet from the field, Humble Oil & Refining Co. holding large properties in the field, with three wells on production on as many leases. The line may be laid to connect with one of its East Texas outlets which carry East Texas crude to the Gulf through three lines and by Shreveport through another outlet, or may connect with a major line at Corsicana.

Louisiana Bills Affecting Oil and Gas Interests

BATON ROUGE, La., May 26.—Legislative measures with far-reaching effect on the leasing of Louisiana-owned lands for oil and gas exploration, refining, retail of lubricating oil and refining of crude have been proposed by Gov. Richard W. Leche. The fact that all have endorsement of the administration virtually assures their enactment.

Of paramount importance to the exploration branch of the industry is Governor Leche's proposal for a board for leasing of Louisiana-owned lands. Replacing the provision which gives the Louisiana governor exclusive right to lease public-owned lands, Governor Leche proposes creation of a five-man board headed by the governor and consisting of four of his appointees. Meat of the measure is in the provision that seekers of lease on state lands must make application 15 days prior to granting of the lease. Meantime, the state reserves the right to advertise the land for lease and to make his own geophysical survey.

Furthermore, the leasing proposal provides that failure to start drilling operations within a year after granting of lease will call for payment of delay rental equivalent to half of the cash bonus. This raises the question in the minds of some oil men as to whether the state will benefit or lose. Elaborate bonuses will be entirely eliminated by companies which have no immediate plans for development. An additional provision is that no more than 5,000 acres of land will be awarded in any one lease.

The proposed "privilege tax" on natural gas pipe line companies is aimed at circumventing previous unsuccessful attempts to levy on companies doing an interstate business. Governor Leche's program also calls for increasing the natural gas production tax from a fifth of a cent to four-fifths of a cent per 1,000 feet, which in reality is a severance tax on gas production similar to that existing on crude oil production.

The other measures pertaining to the oil industry in Governor Leche's program provide for 5 cents per quart levy on lubricating oil, which has been earmarked for construction and maintenance of state highways; reduction of the refining processing tax from 5 cents per barrel to a cent per barrel, and elimination of the manufacturers' tax, one of the late Senator Long's special measures directed particularly at refineries. Indirectly hitting at natural gas companies is Governor Leche's proposal to levy a tax of 5 per cent on sale of commercial gas.

Refinery Projects

New Kendall Laboratory

The refinery control and research laboratories in the Pennsylvania grade crude oil region reflect strikingly the changed attitude which has made the region one of the most progressive in the country. Typical of this advancement is the new Kendall laboratory in Bradford.

Housed in a two-story fire-proof building, 60 feet long and 30 feet wide, this laboratory is provided with a maximum of daylight through large steel-glass windows. Scientifically corrected indirect electric lighting assures optimum working conditions at all times. There is ample room for the numerous pieces of equipment which range from heavy knock testing machines to bearing corrosion testers, in sound-proof rooms or under hoods. There is a cold room and a hot room, a chemical room and a vacuum distillation control room. There are separate offices for investigators leading different lines of research and development work.

Considerable work is done on viscosity measurements. The usual equipment and results are checked by modified Ostwald pipettes developed at Pennsylvania State College. A water constant temperature bath is used for the pipettes in the 100° F. readings. An oil bath is used at 210° F. A more recent investigation is that having to do with the corrosive effect of some lubricating oils on bearings under certain conditions. Testing in this work is done with the Underwood machine. The Timken and other frictional testing apparatuses are widely used. In oxidation test work the Indiana equipment is supplemented by Kendall designed installations. Much of the laboratory work is concerned with vacuum distillation.

Of probably greater interest, but for obvious reasons veiled in secrecy, is the work (in common with practically all grade refiners) on solvent extraction and utilization of highly specialized products brought out in recently developed processing.

Cloud and pourpoint test baths in the Kendall Refining Co.'s laboratory. The two sides may be operated simultaneously, one running below zero and the other at elevated temperatures, or both running a total of 16 samples at low temperatures

Oil News from Foreign Lands

American capital will probably seek investment in foreign oil on an increasing scale in the future. Foreign oil operations do not always run smoothly. Nationalistic tendencies, import tariffs and other restrictions have greatly increased both capital and operating expenditures of American oil companies operating in foreign countries. On the other hand, there are certain advantages which these companies enjoy.

The foreign oil markets have been definitely established as having expansion possibilities equal to those of the United States, if not greater, considering the fact they are at present in a more virgin state of development. Although American initiative played a large part in opening foreign markets, some nations are now showing even greater enterprise than the United States in the perfection of motor power dependent on oil fuel. For instance, the airplane and dirigible airship development. Certain of the foreign countries are giving greater attention to the organized conduct of motor transport and air service on a national scale. They are organizing on a peace, as well as a war, basis.

AMERICAN INVESTMENT

American oil organizations doing business outside the United States are fully aware of the great possibilities of these foreign markets, and it may be said they have been mobilizing to gain the greatest possible efficiency. For these companies face keen competition abroad. Dutch-Shell and Anglo-Iranian, the two largest foreign oil companies with combined assets of approximately $1,250,000,000, some five years ago pooled their marketing activities in the British Isles and in France, and are now operating side by side in many foreign fields.

Within the past 10 years there have been some highly significant changes in the organization of the American oil industry abroad. This has been made necessary by changing conditions, not only in foreign countries, but also in the United States. It is estimated more than $1,000,000,000 has been spent within this period in the development of foreign oil production, transportation, refining and marketing facilities.

The present year has already witnessed the consummation of an important foreign deal in which the Socony-Vacuum and Texas Corp. jointly acquired control of the Barco concession in Colombia from Gulf Oil Corp. at a reported cost of some $14,000,000.

Meanwhile, Standard Oil Co. of California has been expanding its foreign oil production, notably in Mexico and Bahrein Island, and is reported to be negotiating with Texas Corp. for joint development of some of their holdings abroad.

These developments mean, among other things, that the operations of American oil companies abroad will be carried on in the future on a more efficient basis than ever, and a more united front presented against foreign competition. They also presage a new era of expansion involving a renewed flow of capital into every branch of foreign oil development.

This new capital is expected to go directly into foreign fields, rather than in the expansion of the American oil export trade. The latter has been adversely affected by domestic oil field restrictions and the import taxes, as well as by foreign tariffs against American oil products. This does not mean American citizens will not participate in foreign oil expansion. It signifies, however, they will do so only by increasing their oil investments abroad, and not necessarily by an increased flow of American oil into export channels.

There is a definite trend toward the segregation of domestic and foreign oil operations among the individual oil companies operating both at home and abroad. This simply is a corporate phase of the development of foreign oil production for foreign markets, by these companies. At one time, American companies supplied their foreign subsidiaries principally with American oil, a process which is no longer broadly feasible.

Guatemala Concession

An agreement has been made in Guatemala authorizing the "Consorcio Petrolero San Rafael" to exploit the petroleum and other hydrocarbon products in the First Zone of the Department of Izabal. The area covered in this zone comprises roughly 6,000 hectares, in the south central part of the department. Under the terms of the contract the company is obliged to commence drilling within two years from the effective date of the contract unless this period is extended. The contract is subject to ratification by the legislative assembly and is to run for a period of 50 years.

GUATEMALA

Estonian Shale Industry

Estonia, a small country bordering the Baltic Sea created as a result of the World War, has a substantial oil shale industry. Exports of shale oil in 1935 were 103,000 bbls., and went to six countries. They compare with 1934 as follows (figures in barrels):

	1935	1934
Latvia	20,000	15,000
Sweden	5,000	1,000
Germany	57,000	59,000
Finland	8,000	14,000
Lithuania	10,000	5,000
Norway	3,000	3,000
Total	103,000	97,000

Estonia also exported 1,489 metric tons of asphalt in 1935, compared with 1,364 tons in 1934.

New Bahrein Island Wells

Standard Oil Co. of California has been advised by cable that well No. 31 of Bahrein Petroleum Co., Ltd., wholly owned subsidiary, on Bahrein Island, Persian Gulf, has been brought in at the rate of 26,880 bbls. per day, at 2,273 feet. The oil is from the same horizon as that from other wells. The company also announces the bringing in of well No. 26 on April 29 at a rate of 20,400 bbls. per day. These are the largest wells in Bahrein field where there are now 26 producing wells. The company discovered and developed the Bahrein field and holds it in entirety. Production is being limited to meet market requirements. During 1935 the company sold and delivered 1,265,000 bbls. of crude oil from Bahrein and has commitments for shipments of approximately 10,000 bbls. daily during 1936. Work is rapidly nearing completion on a refinery which will utilize an additional 10,000 bbls. daily.

BAHREIN ISLAND

Production, Peru and Ecuador

The production of crude oil in Peru during April, 1936, amounted to approximately 1,403,626 bbls., a daily average of 46,787 bbls., compared with 1,351,810 bbls., or 43,606 bbls. daily, in March. Production of the two principal operating companies for April, March and the first four months of 1936, is shown in the following table:

PERU and ECUADOR

	International Petroleum Co., Ltd.	Lobitos Oilfields, Ltd.
April, total	1,218,098	185,528
April, daily	40,603	6,184
March, total	1,169,859	181,951
March, daily	37,737	5,869
First four months, total	4,707,981	718,088
First four months, daily	38,909	5,934

The combined production of the International Petroleum Co., Ltd., in Peru and Colombia during April was 2,645,291 bbls., a daily average of 88,176 bbls. During the first four months of 1936, total output in the two countries was 10,841,815 bbls., or 89,601 bbls. daily.

Crude oil production in Ecuador for the month of April amounted to 137,690 bbls., a daily average of 4,589 bbls., compared with 140,952 bbls., or 4,547 bbls. daily, in March. For the first four months of 1936, output totaled 524,951 bbls. This is a daily average of 4,338 bbls. Ecuador Oilfields, Ltd., a subsidiary of British Controlled Oilfields, Ltd., is expected to begin active operations in Ecuador in the near future.

Huasteca Petroleum Co. topping plants, right foreground, refinery office center, Tampico

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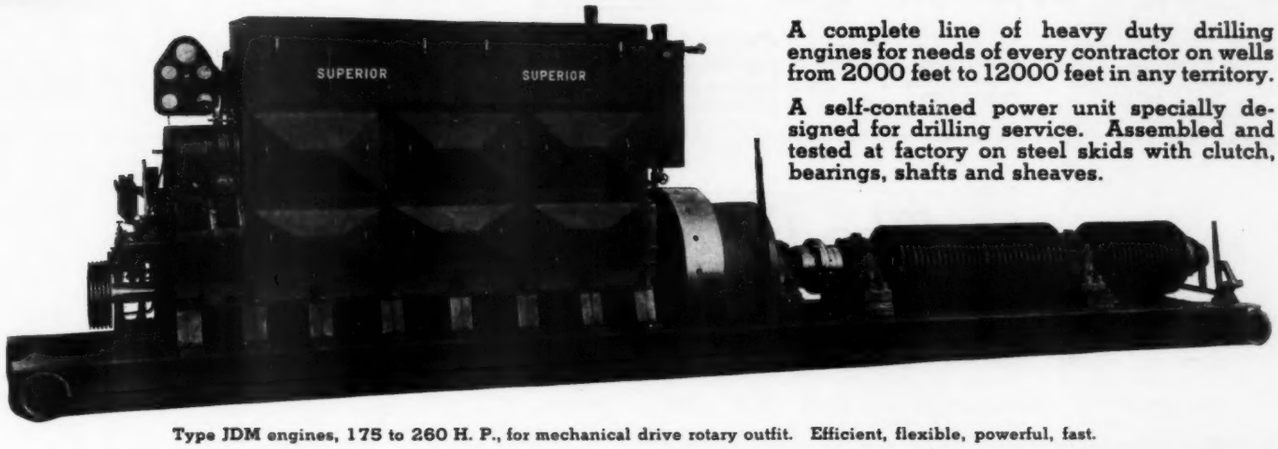

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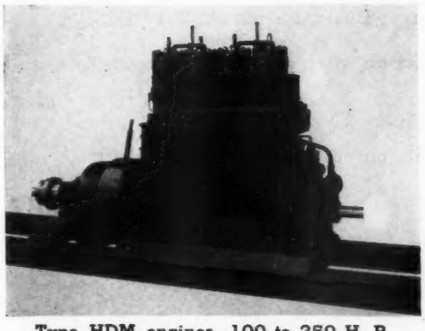

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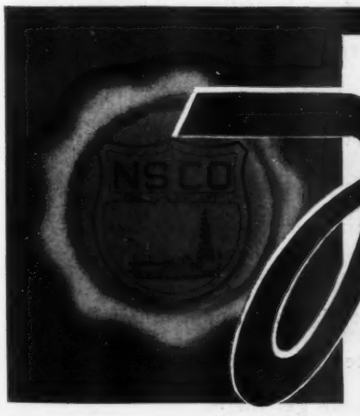

National

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

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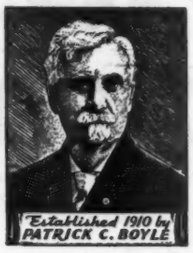

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The Crude Situation

Three of the major producing states Texas, Oklahoma and Kansas, have voluntarily reduced their respective crude production during June below their May allowable and also under the estimated demand reported by the Bureau of Mines. New Mexico has followed suit.

These states, all members of the Interstate Compact, realize the industry is up against a dangerous situation, and are contributing their share towards a correction.

The reports show that excess production over the indicated market demand is prevalent in other states not members of the Interstate Compact and it is their duty as well as that of those within the compact to take steps to protect the general welfare.

While the compact states produce about 70 per cent of the oil they cannot be expected to correct an overproduction situation which is universal except in Arkansas and Michigan. East of the Rocky Mountains Louisiana is particularly important.

That state has steadily increased its output without consideration of market demand or regard for the correlative rights of other states, until it is now producing 60,000 barrels a day or 35 per cent in excess of indicated market demand.

This excessive production is due to the attitude of state officials and it is this attitude that makes the situation far more serious than the actual figures themselves.

It is not only the present 60,000-barrel excess that so alarms the industry. But more particularly the fact that there is no indication when or where this overproduction will stop.

The general attitude on enforcement, the lack of uniformity and the unsatisfactory legal setup create an uncertainty regarding Louisiana's production that is unsettling to the entire industry.

Louisiana's refusal to cooperate in the effort to maintain stability in the oil business while other states curtail their output is disruptive and demoralizing. That situation cannot continue indefinitely.

Louisiana officials may think themselves sure of their tax revenue regardless of price but price will ultimately affect production and reduced output will mean less state revenue. Governor Leche may recall his words to The Oil and Gas Journal: "We cannot get ours, unless they get theirs".

A Louisiana policy that undermines the oil industry market cannot benefit Louisiana. Oil, like cotton, is a world product, affected by overproduction in any section. If prices decline below cost of production Louisianians will find they cannot get theirs.

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Moore's good name is proof of worthy performance in the past, and evidence of ability to serve well today . . . .

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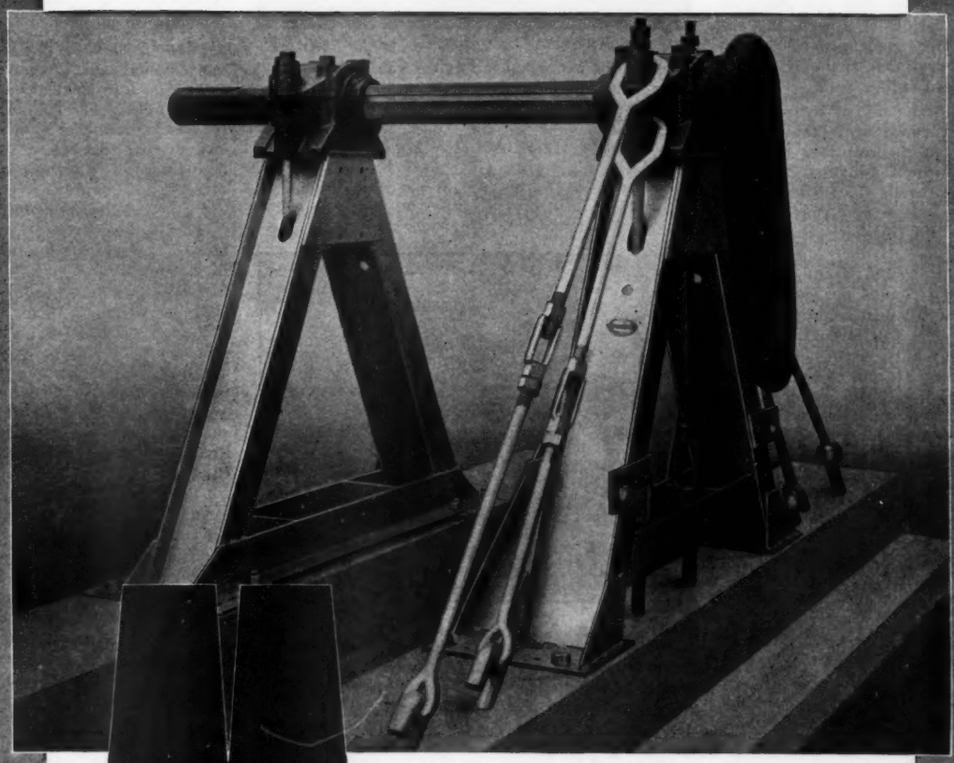


Moore Jack Posts and Bearings stand up under the hardest drilling and pumping conditions. Illustrated is the Type 95-A jack post with Type D chain oiled jack post boxes and double set of diagonal turnbuckle braces. Full details in Catalog Section H.

DERRICKS
PUMPING EQUIPMENT
Moore

Flow of Oil in Fine-Grained Lime F

Increased With Penetrating Acid

The acidization of an oil or gas well is a practice of placing within the permeable spaces in a producing formation an acid that will dissolve the formation, thereby enlarging drainage channels through which the oil or gas may flow more freely into the well, and opening new drainage channels by dissolving barriers which may be preventing the flow of oil or gas into the well.

So far, the bulk of acidizing treatments has been confined to treating producing formations which consist of calcareous materials such as limestone, chalk, etc. Commercial hydrochloric acid is being used for this purpose.

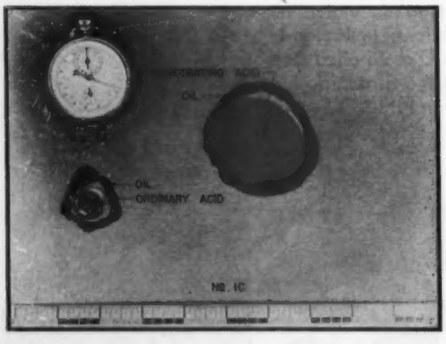
Although the acid may enlarge the diameter of the bore hole at the bottom of a well, this enlargement is secondary in importance to the enlarging or opening of drainage channels within the formations which lead into a well.

The basic idea behind the use of hydrochloric acid for treating limy formations is that it not only dissolves the lime but the resultant products are gaseous and liquid which, provided the well has been properly treated, will flow back out of the formation into the well where they can be brought to the surface by flowing, pumping or swabbing.

Commercial hydrochloric acid of full strength weighs approximately 9½ pounds per gallon and contains approximately 30 per cent acid and 70 per cent water. This is called a full strength acid in the field but due to the highly viscous nature of the spent acid of this strength and the possibility of some of the dissolved limy salts dropping out of solution, it has been customary to dilute the acid in order to reduce the resistance of a spent acid to come back out of a formation and to have more water available to keep the salts in solution. Most of the treatments in the field have been with a 15 per cent acid. However, in low pressure sands in which it is very undesirable to have a highly viscous spent acid which would offer much resistance to flowing back out of the formation, most treatments have been made with a 7 to 10 per cent acid.

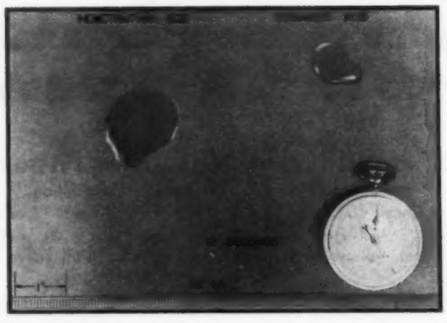
The amount of acid, as well as the concentration, has been varied in different wells and in different localities.

One of the significant points in the use of hydrochloric acid is the amount of limestone it is capable of dissolving. A 1,000-gallon treatment of



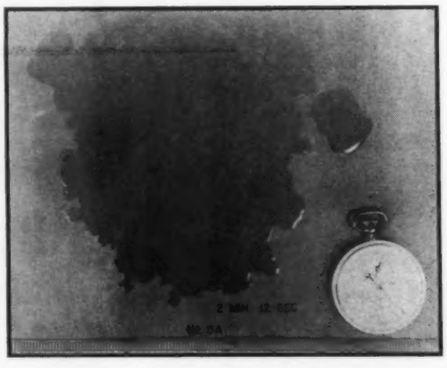
15 per cent acid is capable of dissolving approximately 10 cubic feet of limestone.

It is obvious that the acid should be placed where it will do most good and it is the purpose of this paper to explain some important new improvements in controlling the flowing characteristics of acid whereby it is possible to obtain new



results and overcome a number of problems that have confronted the acid treating of wells.

A number of acidizing experiments were conducted last year at the University of Texas.* Quoting from their report: "The results of the experiments show clearly that acid treatment of fine-grained cores with straight diluted acid results in a loss in permeability. This loss appeared



to be due to clogging of pores by very fine and insoluble residues, which under the microscope show fine, needlelike crystals of acid-insoluble silicates mixed with a little silica and traces of colloidal organic matter. In cores in which the interspaces are less than 0.01 mm. in diameter, the insoluble residue resulting from the solution of limestone clogs up the pores and definitely lessens the flow of liquids through them. The effect of this insoluble colloidal and crystalloidal material on the permeability varies with the texture of the porous rock. In rocks in which the pores are very large and the fluids travel chiefly through the larger channels, the acid is forced rapidly into the channels and enlarges the existing passageways. Any residue left by the acid reaction can be washed out through the channels, if the wells are swabbed or pumped rapidly after treatment. In fine-grained rocks, the penetration of the acid even under higher pressures is slow. The acid has become spent before it has traveled far into the formation. The chief result of the treatment is to enlarge the diameter of the bore hole instead of drainage channels in the formation. At the same time any colloidal matter in the spent acid is forced on into the fine interspaces in the rock resulting in clogging the pores and lowering the permeability. Ordinary acid treatment of very fine-grained rocks may be harmful rather than beneficial."

*Laboratory investigations on acid treatment of oil sands presented at A.I.M.E. meeting, Houston, Tex., October, 1935.

It is believed that the penetrating acid described herein will overcome these objections and will replace ordinary acid when treating very fine-grained limy formations.

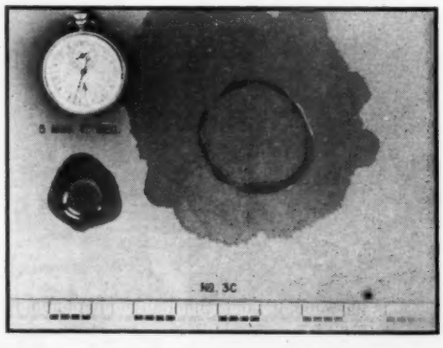
The University of Texas paper also states that: "It has been suggested by some engineers that in treating coarse-grained, partly cavernous rocks, better results might be obtained by forcing a soluble gelatinous substance into the larger cavities before treating. They suggest that the soluble gel should keep the acid out of the larger cavities and permit it to be forced into the small spaces where it would do most good."

That is another phase solved by the use of the penetrating acid. The penetrating acid will uniformly go into small openings that are not entered by ordinary acid. This is very vividly brought out by the experiments shown in photos Nos. 1-6 accompanying this paper. They show that ordinary acid by-passes the tighter spaces whereas the penetrating acid uniformly enters all of the openings, both large and small.

The University of Texas report also states: "It is also known that if organic solvents of low surface tension and low viscosity, like benzene or high-test gasoline, are forced under pressure into the fine pores of sands partly clogged with paraffin, then swabbed out, increased permeability will result." This is due to a partial dissolving action of the solvents on the paraffin which may have accumulated in the pores. On the other hand, a penetrating acid may likewise be forced into the fine pores of partly clogged sands and will dissolve the limestone around the paraffin and thus accomplish increased permeability.

The University of Texas paper sums up as follows: "The important results of these experiments are in showing that, if the limestone is fine-grained and impure, as are many oil-reservoir rocks, the insoluble residue dissolved from the core by the acid is granules and minute acicular crystals larger than the pore spaces in the rocks. Therefore this material clogs the core and decreases permeability, no matter how much washing or swabbing is done in an endeavor to clean it."

The penetrating acid described herein, by providing a very high fluidity and penetrability of the spent acid, even in the high strength acids, makes



it possible to use high concentrations instead of low concentrations. Our experiments show that these insoluble precipitates referred to in the University of Texas report do not form unless the acid becomes very weak, which is not so likely to happen if very strong acids are used and allowed to remain in the formation only a short time. In

eFormations

By C. P. PARSONS

Vice President, Halliburton Oil Well Cementing Co.

Specially equipped tank truck used for hauling acid to the well location

treatments with ordinary acid a weak acid is used to begin with in order to have lower viscosity.

The strength of acid is a question that has always had both a maximum and minimum to consider.

The maximum was chiefly determined by the resistance to flow of the acid when it becomes spent. A highly viscous condition of the first part of a batch of ordinary acid due to its becoming spent while being forced into a formation tends to prevent the rest of the batch from reaching out to any great distance in the formation. The result is a greater tendency to enlarge the already large open portions of the formation without going into any of the smaller openings.

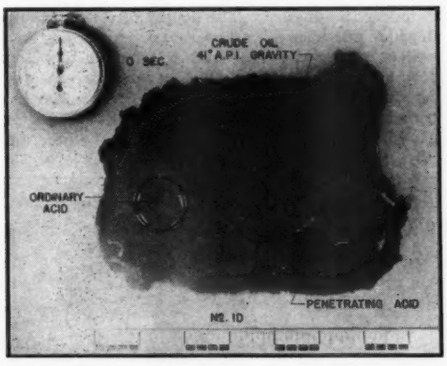
The minimum strength of acid was, of course, determined by the obvious fact that to do any work there must be enough acid present to consume some limestone and establish increased permeability in the formation. A weak acid, however, is every inefficient and often detrimental. Although it is readily conceivable that the most efficient acid would be a strong acid, yet ordinary acid of such strength would not have the proper flowing characteristics. The development of a penetrating acid which permits the use of strong acid concentrations and at the same time has flowing characteristics very similar to the flowing characteristics of the oil itself, is a very important step in the acidization of wells. Such an acid is now available and will flow in and out of a formation practically as easily as the oil itself. Where it is customary in ordinary acid treating to reduce the acid down to 7 or 10 per cent in order to reduce the high viscosity of the spent acid, it is now possible with the penetrating acid to use a 15 or 20 per cent solution without running into any of the problems caused by the high viscosity of the spent acid or caused by the precipitation of insoluble matter which may result from the use of a weak acid.

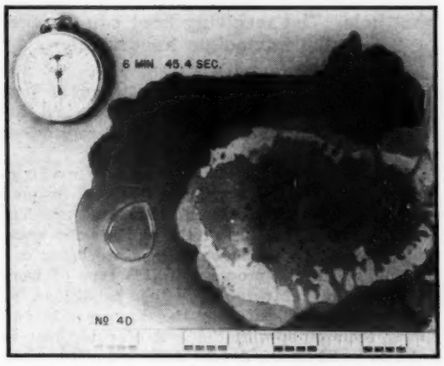
When using the stronger acids an operator can get more lime dissolved and more area covered than in the past when weaker solutions were used. If a tight section in a well is to be treated, a penetrating acid will accomplish results whereas an ordinary acid will not.

In the lubrication of automobiles, regular lubricating oil can effectively reach the relatively open places that require lubrication but when the tighter places such as leaf springs, etc., are to be lubricated, a penetrating oil is very effective and therefore has found an important place in the lubricating field. By controlling the penetrability of regular lubricating oils used in crank cases of automobiles more thorough lubrication of the tighter places such as bearings, etc., has been obtained with some lubricating oils than with others.

It is very apparent that an acid which has a penetrability practically the same as that of crude oil of 41° A.P.I. gravity is a distinct improvement in the acid treating of tight places in formations. This penetrating acid retains the penetrability after it is spent, which makes it doubly important, as it will not produce a detrimental damming effect within the formation. This damming effect is possible with ordinary acid.

Hydrochloric acid, being composed mostly of water, is immiscible with oil. The repellant nature of an oil surface to a surface of hydrochloric acid solution makes it difficult for ordinary acid to reach limestone that has an oil covering. The penetrating acid, however, will penetrate under the film of oil. There also is an actual spreading and wetting energy set up at the point of interfacial contact between the penetrating acid and the oil film. The spreading energy of the penetrating acid is greater than that of 41° A.P.I. gravity oil and many times greater than that of ordinary acid. These points are vividly illustrated by a group of photos accompanying this paper.

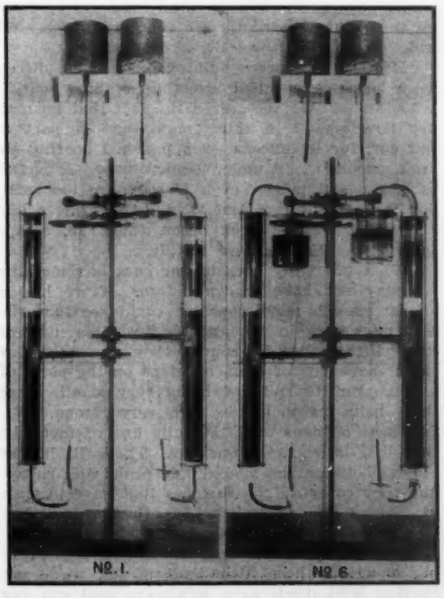




If, when treating a well, it is a question of putting acid in the bottom of the well for the purpose of dissolving lime in the exposed face of the formation, ordinary acid would be effective. However, if the formation has an oily covering, the photos show clearly that ordinary acid does not act to get under an oil film, whereas the penetrating acid does it readily. If it is a question of forcing the acid into the more open spaces within the formation, in order to enlarge same, ordinary acid would enlarge the open spaces but would act to by-pass the channel around the tighter spaces and there would be greater tendency for the formation of emulsion between the highly viscous spent acid, and the oil, agitated by the generation of carbon dioxide gas. The penetrating acid would uniformly penetrate all permeable spaces and minimize the formation of emulsion because the surface tension of the acid would be considerably lower than that of ordinary acid and approximately the same as that of the oil. If it is desirable to enlarge small permeable openings in a formation, their sub-capillary size having retarded the flow of oil or gas into a well, ordinary acid will not penetrate these small openings but would have to depend upon eating the limestone at the exposed ends of those small openings. This is objectionable because the acid which first comes in contact with the exposed ends of those small openings becomes spent and therefore becomes a barrier between the openings and the unspent acid. If a pressure were to be applied in an attempt to force the unspent acid against the small openings, the highly viscous spent acid would be forced under high pressure into the small openings and would set up a dam, which may or may not be later overcome by the pressure of the oil within the formation. The penetrating acid, on the other hand, can be placed quickly and uniformly in sub-capillary openings, will react with the limestone quickly because higher concentration of acids are possible and will readily flow back out of the openings.

The use of penetrating acid, to be successful, must not only involve control of surface tension, which is only one factor in the problem, but there must also be control of wetting and spreading energy. The control of surface tension is important because of its prevention of emulsions. The control of wetting and spreading energy is importtant in its relation to uniformly penetrating sub-capillary spaces between paraffin and lime formation; to quickly penetrating and returning from small openings, and to overcoming the wetting or spreading energy of the oil film on a lime formation, thus penetrating between the oil film and eating into the limestone.

There are insoluble materials formed during acidizing operations within the formation caused either by impurities in the limestone, or within the commercial grades of acid, or picked up by the acid while being pumped down through the tubing. For instance, the presence of iron or aluminum salts in the formation or iron impurities in the acid, will form solid precipitates during the reaction of the acid with the limestone when the spent acid becomes very weak. However, they do not form solid precipitates in relatively strong acids but may precipitate during a



Laboratory equipment used in acid research

secondary reaction when the acid has become weakened and spent.

Especially in formations containing oil under low formation pressure, it is necessary to use weak acids in order to lower the viscosity of the spent acid so that it will flow back out of the formation. In such cases it is likely that insoluble products of secondary reaction will form and tend to clog the formation. The stronger penetrating acid will penetrate the formation more quickly and flow readily back out of the formation. By a quick treatment, with penetrating acid, that is, allowing the acid to stay in the formation only a relatively short time before bringing it back out, the permeability of the formation can be materially increased without the danger of insoluble precipitates being formed.

If a gas well has become depleted to the extent that constrictions in the producing formation are holding back the gas, it is obvious that any constriction which would hold back the gas must either be very tight or completely blocked by a solid wall. If it is a case of tight openings retarding the flow of the gas or if there are tight openings leading to a solid wall which shuts off the gas a penetrating acid will do it more readily and more effectively than ordinary acid and there would be no likelihood of setting up dams by forcing highly viscous spent acid into small openings as would be the case with ordinary acid.

Summarizing the above, the penetrating acid has greater wetting and spreading energy than either straight acid or oil, causing it to spread and wet a surface more readily than ordinary acid or oil. It has lower surface tension than ordinary acid and approximately the same as that of 40° A.P.I. oil, which makes it unlikely to form emulsions as is the case with ordinary acid.

It has greater fluidity, causing it to flow more readily than ordinary acid and, combined with its high wetting or spreading energy, flows more uniformly into the permeable spaces in a formation and back out again.

This acid is the result of several years' development in the laboratory and in the field.

Broadcast by General Motors Stresses Car Lubrication

In a recent broadcast of General Motors over the National Broadcasting Co. the part played by oil in the lubrication of our modern equipment and machinery was stressed. The following information was given during the broadcast.

Modern life moves on oil. Without oil our mechanical age would cease. We could not get food, water, clothing, or lights the way we get them today. Every factory would close. Trains on tracks, ships on the sea, and cars on the streets and highways would stop. And that gets us down to the point we drivers are concerned with. We ride on oil, when we drive our cars.

Recently we were talking about the difference between so-called smoothness and scientific smoothness. We recognized the fact that no matter how smooth a thing may seem—a part in our car, for instance, even a polished bearing—it isn't smooth at all under a microscope. It is full of peaks and ridges, even if they are too small for the eye to see. And when two surfaces like that move against each other, they rub, scrape and grind. Friction, we call it.

What oil really does in our cars is something we may not have known before. If we had a strong enough microscope we could see that the oil and grease in our cars is just like a great many little balls. Of course, they are very, very tiny; thousands of them could go on the point of a pin. But in spite of being very small, these little balls, or molecules, are very strong.

These millions of little balls are in fact like tiny ball bearings in our car. They fill in the valleys between the microscopic peaks and ridges, and they cover all the surfaces that have to slide or revolve on each other. In other words, they keep the surfaces from touching each other.

So, as long as we keep the moving parts rolling along on these little balls of oil, we've got friction held down to a minimum, and our car is in shape to operate.

Geophysical Exploration of Galveston Bay Requires Novel Engineering

By F. L. SINGLETON

One of the most extensive and elaborate geophysical programs ever started on the Gulf Coast is now under way at Galveston Bay and associated bays where two companies are simultaneously exploring approximately 130,000 acres of submerged land that were recently acquired from the state of Texas. The work is being done by the Salt Dome Oil Co. and California Co., which are jointly exploring 65,000 acres, and Humble Oil & Refining Co., which has approximately the same number of acres. This is the largest

Moving off after placing dynamite charge in shot hole. The receiving boat can be seen in the immediate foreground

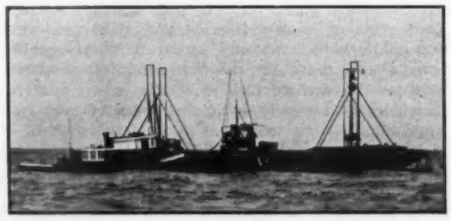
single body of water in which geophysical exploration has been done, and it has been estimated that from 12 to 18 months will be required to complete the work.

With the exception of mounting and moving of equipment by boats, geophysical work in open water as this is no different than on land. The most interesting feature of the work is the systematic manner in which operations are being carried on. With the progress of this type of work dependent upon favorable weather conditions, no expense has been spared by the companies in outfitting themselves with the best of equipment in order to speed up the development and at the same time maintain efficient results.

In order to accomplish the work easier and faster, a fleet of 19 boats has been purchased by Salt Dome Oil Co. and California Co., representing an expenditure of $40,000. The fleet is composed of a two-story 84x24 foot houseboat, tugboat, drilling barge, instrument boat, receiving boat, shooting boat, surveying boat and other small motor boats which are used for various purposes. Each crew has a specific job to do, and it is carried out in such a manner that there is no lost time, with the exception of when the bay becomes too rough.

The houseboat is used as a base of operations as well as living quarters for 27 men. This saves many hours of time in transporting the crew from shore to location. The boat is equipped with every modern convenience, including electric lights, shower baths, radios, recreation room and various other conveniences in which to make more comfortable living quarters for the men. At present the boat is stationed about a mile and a half out in Trinity Bay, and as the work extends farther into the bay, it is towed to location by small tug.

Three hot meals are served each day which are



Shot hole being drilled by Humble Oil & Refining Co.'s barge in Galveston Bay

prepared by two negro men (Amos and Andy) in a spacious kitchen which is equipped with electric refrigeration. The meals are cooked on a large oil stove and are served in family style in a large mess hall. A week's work on the water is finished at 12 o'clock noon Saturday and the crew is taken ashore and do not return until late Sunday afternoon. In the meantime, the houseboat is towed to Barbers Cut, where another week's provision and water supply is taken aboard.

Directions for the day's work is outlined by the party chief at his offices located on the houseboat. Locations for the shot points are given to the surveying crew, and after each location is made they are marked by a weighted white wooden floating block that is easily located by the drilling barge. The shot holes are spaced from 1,500 to 1,600 feet apart and are cross sectioned across the designated area.

The shot holes are drilled by a portable rig mounted on the rear of a large wooden barge and is manned by four men. There is no special design needed for the drilling barge, as the rig can be located on the rear or on the side of the barge as noted by the pictures. The depths of the shot holes depend on where surface clay is encountered, which has averaged around 130 feet, although a few holes have been drilled several feet deeper. As the development extends farther into the bay the depths of these holes naturally become greater. Three-inch casing is set on bottom of the hole and

Salt Dome Oil Co. and California Oil Co.'s houseboat being towed to location by tug

extends about 3 feet above the surface, which is easily located by the shooting boat.

As these holes are drilled, this work is followed by the shooting boat, which loads the hole with a quarter to a pound charge of dynamite, and after the hole is shot and the recording made by the receiving boat, a white flag is left at the top of the casing which informs the crew on the drilling barge that the casing is ready to be pulled. This work is so systematized that the casing from these old shot holes is pulled within a short time after they are used.

Plans are being made to install a two-way radio system in Salt Dome-California Co.'s houseboat by which contact can be made with the company offices at Houston as well as to a point along the shoreline. The system will be on the same order that is successfully operated by the Texas Co. in Coastal Louisiana, where the company is operating several isolated fields in Terrebonne Bay miles from highway and telephone service.

The incentive for an increase in geophysical work in the bay was brought to light the past week by the discovery of a third oil field around the edges of Galveston Bay. The new field was discovered by the Salt Dome Oil Co. and is located on the Cotton Lake prospect, just a few miles inland from where the company is now shooting. The other fields discovered within the past 16 months are Turtle Bay and Anahuac, all being located in Chambers County.

Crude up, skimming out

Hot oil sold at a dime a barrel a little while ago and 84 refineries were running in East Texas

East Texas crude today is posted at $1.15 a barrel and just 12 refineries are running there —most of them limping

What does that mean?

It means when the price of crude goes up many a skimming plant goes down—and out

Dubbscracking is the way to make gasoline

With a Dubbs unit you can afford to pay the price for crude because you can make more gasoline out of it—and its Dubbscracked gasoline—your Dubbscracked gasoline

You can sell more of it and get the price for it

And make more money

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

OPERATING IDEAS A PRIZES BY THE N

The injection of the new feature into the recent annual convention of the Natural Gasoline Association of America—this feature known as the presentation of "Operating Ideas" or "Operating Kinks"—met with a ready response. And as the convention closed the opinion was frequently heard that this contest was one of the most valuable things on the program of the association this year.

F. E. Fisher, plant superintendent, Skelly Oil Co., Skellytown, Tex., was chairman of the session devoted to the contest. Judges appointed by him to award prizes were: Arch Perry, plant superintendent, Carter Oil Co., Seminole, Okla., J. F. Redmond, chief chemist, Shell Petroleum Corp., Tulsa, Okla., and G. W. McCullough, chief engineer, Phillips Petroleum Co., Bartlesville, Okla. The association reported that more entries had appeared than expected and that, furthermore, there were a number of last minute entries which could not be taken care of.

Entries in the contest were judged in three classifications:

Prizes: Grand Prize picked from all classes, $25; First, $15 and Second, $10 awarded in each of three classes; there were also five $3 and five $2 Recognition prizes awarded to entries selected from the three classes.

Below are shown some of the prize winning ideas; the rest will be presented in early issues.

N.G.A.A. Prize Winners

Grand Prize: R. K. McConnell, district superintendent, Oklahoma City and Edward Dolezal, construction engineer, Bartlesville, Okla.; Class (A), First, Perry Hagar, Carter Nine, Okla.; Second, R. K. McConnell, Oklahoma City; Class (B), First, A. H. Wilkinson, Skellytown, Tex.; Second, C. P. Duvall, Cunningham, Kans.; Class (D), First, J. L. Thompson, Trinidad, Tex.; Second, H. E. Scott, Skellytown, Tex.; Recognition prizes, (two), A. H. Bazell, Burkburnett, Tex.; V. L. Guiser, Carter Nine, Okla., H. H. Hiatt, Breckenridge, Tex.; Norris Plank, Tulsa, Okla., Jeff L. Hamilton, Trinidad, Tex., Fred L. Fender, Bryant, Okla., T. A. Ingram, Whittenburg, Tex., I. Earl Nutter, Whittenburg, Tex., and C. P. Duvall, Cunningham, Kans.

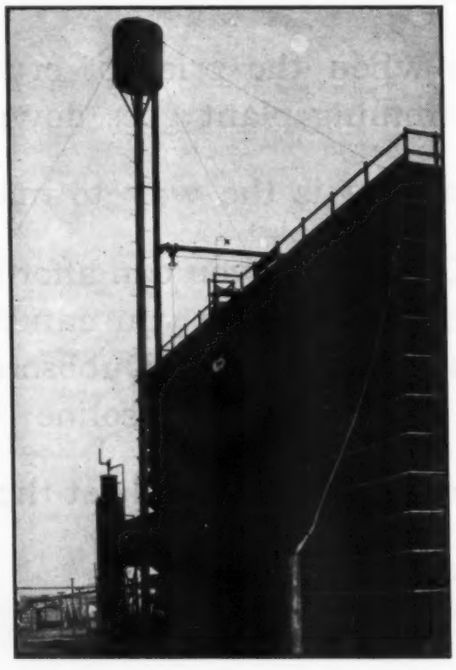
Honorable Mention: F. H. Townsend, Gordon, Tex., C. B. Myers, Skellytown, Tex., Glen Smith, Whittenburg, Tex., Charlie A. Stephen, Gordon, Tex., J. E. Carlson, Skellytown, Tex., Roy Bullick, Fairfax, Okla., H. E. Chambers, Lyman, Okla., E. J. Haslan, Skellytown, Tex., C. R. Jackard, Skellytown, Tex., C. N. Smith, Carter Nine, Okla., and R. Roy Davis, Whittenburg, Tex.

Utilization of Residue Gas at Plant Pressure

R. K. McCONNELL and EDWARD DOLEZAL
Phillips Petroleum Co., Okla. City, Okla.

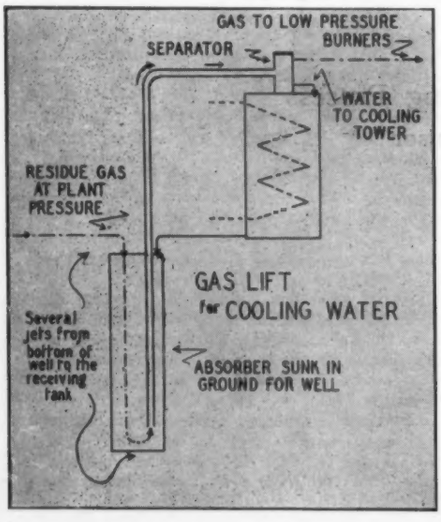
In one natural gasoline plant, residue gas at plant pressure is utilized to lift water over a large cooling tower. Approximately 12,000 gallons of water per minute are lifted to the top of the tower, doing the equivalent work of 12-1,000 G.P.M. centrifugal pumps equipped with 20 h.p. motors. This gas lift system has been operating for over four years without interruption and without operating or maintenance expense.

The equipment consists of an absorber



sunk vertically into the ground for a well and several jets extending from the bottom of the well into a receiving tank placed a few feet higher than the top of the cooling tower. Water flows by gravity from the cooling tower pit into the well, is lifted by the gas jet arrangement into the receiving tank, where water and gas are separated, and then flows by gravity to the water distribution system on top of the cooling tower. The gas exhausts from the receiving or separating tank at about 2 lbs. pressure and is then burned in low pressure burners at 1 1/2 lbs. pressure to fire a portion of the plant boilers.

This jetting system operates most efficiently on gas at 29 lbs. pressure. About 3,250 gallons of water are lifted per 1,000 cubic feet of gas.

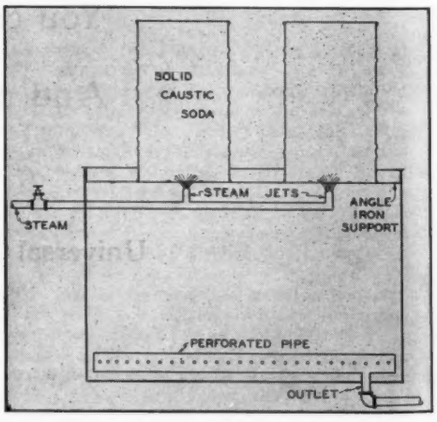

GAS TO LOW PRESSURE BURNERS
SEPARATOR
WATER TO COOLING TOWER
RESIDUE GAS AT PLANT PRESSURE
GAS LIFT for COOLING WATER
Several jets from bottom of well to the receiving tank
ABSORBER SUNK IN GROUND FOR WELL

At another gasoline plant, residue gas is utilized to lift water over a cooling tower and the exhaust gas from the gas lift is used as fuel for internal combustion engines which are not equipped with fuel injectors and which operate on 12-ounce fuel pressure. One entire booster is thus operating on this otherwise waste gas.

Caustic Melting Device

T. A. INGRAM, Stillman
Whittenburg, Texas

Drums of caustic are supported over the mixing tank by angle iron frame work. Steam jets melt caustic quickly and safely. Exhaust steam provides an economic means of supplying the heat and water.



Steam Ejector on Centrifugal Pump

JEFF L. HAMILTON, Chief Engineer
Trinidad, Texas

This ejector is placed on the vent line on top of a centrifugal pump, making it possible to pick up suction immediately. It has

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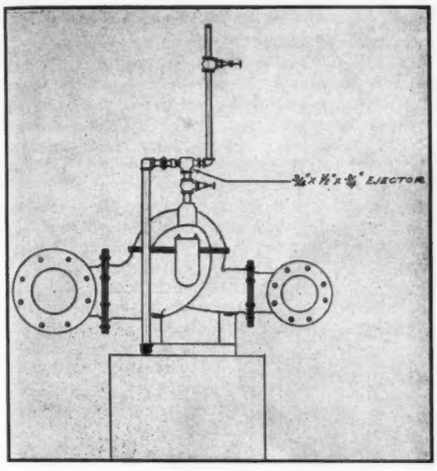
proved helpful when the pump loses suction in changing water in a coil pit.



Boiler Fuel Control

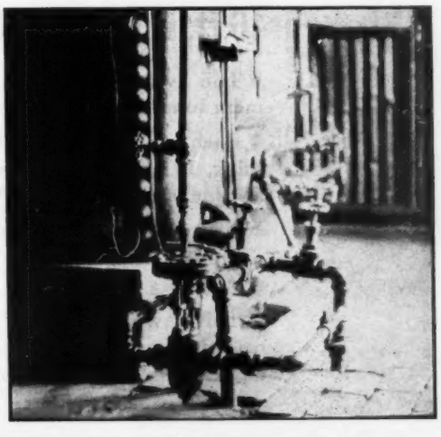
A. H. BAZELL, Plant Superintendent
Burkburnett, Texas

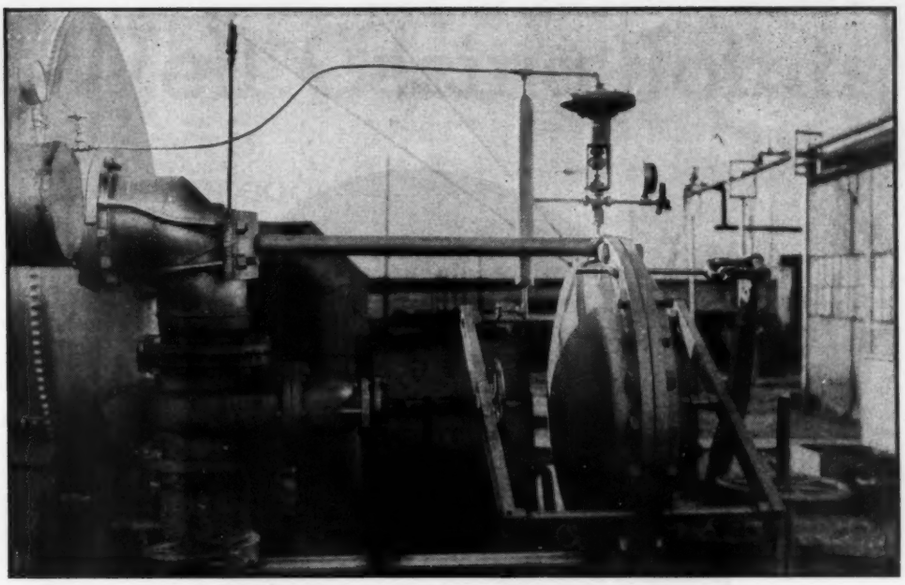
In the early part of November, 1935, a 3/4-inch Cash direct operated spring loaded type diaphragm valve was installed on the fuel oil line to our Burkburnett plant boilers for the purpose of eliminating the hand method of regulating the steam pressure.

OPERATION: The diaphragm chamber at the top of the valve was connected direct to the main steam line leaving the boilers. On this type of valve the spring tends to open the valve and is easily adjusted to pass the necessary amount of oil for any steam pressure desired. Assuming that a boiler steam pressure of 110 lbs. is desired, the spring is adjusted so that the valve will deliver the right amount of oil to the burner for this pressure. If the steam pressure exceeds 110 lbs. the force it exerts on the diaphragm will exceed the force exerted by the spring and will throttle the valve to a point where proper reduction is effected. If the steam pressure starts to drop, the action of the diaphragm spring will force the valve open admitting more oil to pass to the burner. There are of course very few abrupt movements; the valve assumes a floating position and responds readily to any variable loads. This is born out in picking up at random any of the recording pressure charts and comparing the results obtained before and after the installation of this hook-up.

The boilers are equipped with Gem Oil Burners. In order to regulate the steam pressure to the burner we installed a one-inch (1") globe valve on the steam supply line to the burner. A pressure gauge between the valve and the burner was also installed. The purpose of the pressure gauge is to determine the correct steam pressure to the burner for proper combustion.

This installation requires little attention from the plant operators and it has reduced daily fuel consumption from one to two barrels, thus effecting a saving of $425 per year, based on the average price.





Gate-Valve Regulator

NORRIS PLANK, Gas Supt., Tulsa, Okla.

Diaphragm case made from discarded gas cooler cover plates, 48 inches in diameter. Diaphragm is about 1000 inches effective area. Pilot operated. Three pounds on the diaphragm exerts nearly 3000 lbs. on the valve stem.

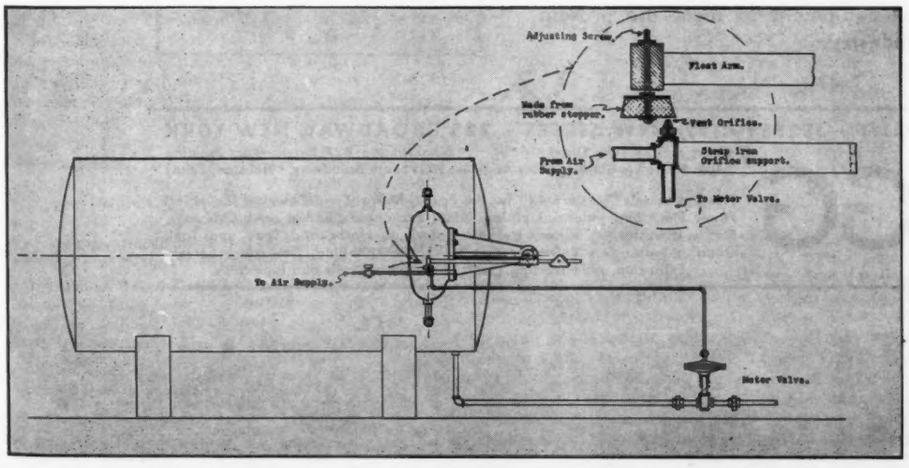
Counter balanced with leaf spring from auto truck.

Out-of-pocket expense for assembly and installation approximately $25.00.

The gate valve is actuated by the pushing and pulling movements effected by movements of the diaphragm. The spring equalizes the pressure exerted on the diaphragm and slows up the tendency to change.

Automatic Liquid Level Control

A. H. WILKINSON, Engineer, Skellytown, Texas



150 TON KELLOGG FLASH TOWER

16 ft. in diameter by 6 ft. long overall—1 in. thick

- This is one of the largest vessels ever shop fabricated for shipment to a distant point.
- Each section is made from a single carbon steel plate one inch thick, 10 feet in width and 50 feet 6 inches long, containing over 500 square feet of area. This is the largest surface area ever rolled.
- The heads are so large they could not be flanged or dished in one piece, so were made from two sections and "Masterwelded" in the Kellogg shop.
- This tower is further evidence of the ability of the Kellogg organization to fabricate special equipment to meet the present day demands of the petroleum industry.

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Welded Oil-Well Casing Joints

By MARVIN COOK
Humble Oil & Refining Co., Houston, Tex.

The development of new methods and materials following shortly after the demand for them has been the course in the development of tubular goods for service in oil wells.

Conditions demanding the use of casing have varied from setting depths of somewhat less than 100 feet in earlier times to depths of somewhat over 10,000 feet at the present time. Similarly, the development of casing has progressed from the earlier times when it was fabricated from thin sheets of low-tensile material, rolled and riveted by hand in the local tinner's shop, to recent times when it is fabricated from high-tensile material under the precisely-controlled processes of the great mills.

Although the development of casing has kept abreast of the demands, it is generally admitted that the present production trends have presented a problem in casing couplings that has not been adequately solved. There are on the market a number of designs for couplings which possess definite improvements over the A.P.I. couplings, and on which further development should be encouraged. However, in a search for a joint of flush design with 100 per cent efficiency, it is plausible to turn to welding with the hope that the success of welding pipe joints in associated industries will be repeated in the oil-production department.

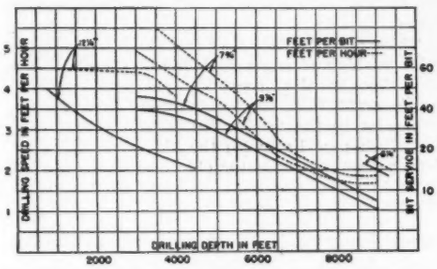

Fig. 1—Proportional service of various sizes of rock bits

The purpose of this discussion is to point out the need for and the possibilities of the development of welded couplings for casing, and also some of the problems to be encountered in that development.

DISCUSSION

Designs of Threaded Couplings

The A.P.I. threaded coupling* heretofore has adequately met the demands from the service conditions imposed upon it and, in addition, it has the economic advantage of simplicity in design which readily allows it to be reconditioned in local service shops. Later the A.P.I. standard specification was modified to include data on a longer thread and coupling which makes a considerably stronger joint. As the demand advanced for a joint of increased strength, a number of manufacturers made available joints of various designs which have been discussed by W. C. Shutts[1a] in a previous Institute paper wherein is given a graphic plot of the joint efficiency.

With reference to mechanical designs of joints for casing, it is pointed out that they are claimed to obtain 100 per cent of the strength of the pipe wall by proper design of the upset. In this discussion, any further allusions to mechanical designs will be of a general nature.

*A.P.I. Standards No. 5-A: Casing, Drill Pipe, and Tubing (seventh edition).

[1a]Figures refer to bibliography at end of article.

(The statements and opinions expressed herein are those of the author, and should not be considered as an official action or opinion of the Institute.)

Relationship of Casing Programs to Drilling Costs

The exceedingly hard formations encountered in the deeper horizons in some areas increase normal drilling costs to an abnormally high figure the important items of cost that can be analyzed and compared are those of casing material, drilling bits, and drilling time. Since bit service and drilling time are interdependent, it is of interest to inspect the comparative service of different sizes of bits when drilling in similar formations. It is well known that an expensive large bit obtains less footage and lower speed of penetration than a less expensive small bit. From the records of several deep tests drilled in the harder formations, the comparative service of large and small bits is indicated graphically in Figure 1.

On analyzing the total drilling costs, it is found that an approximate saving of 20 per cent is effected by the use of smaller sizes of casing, mainly in the items of drilling time and bits. Similar comparative results were obtained by changing the casing program in other fields. In one field the program for the oil string was changed from size 7-inch to 5½-inch outside diameter, and resulted in a saving of approximately 20 per cent; but the proportion of savings was about equally distributed between the items of casing material and drilling time.

For these and other reasons, the opinion is becoming prevalent that flush-joint casing, on the whole, has attractive possibilities, especially for the deeper horizons.

Safety Factors in Collapse and Tension

Everyone is familiar with the pipe tables showing the safety factors for setting depths of the multitude of sizes, weights, and grades of casing. Briefly, the value for collapse of a tube is based on the ratio of wall thickness to diameter, which is the equation of a straight line with reference to a given diameter. The values for tension are based on the tensile strength of material and the joint efficiency of the coupling which varies inversely with the diameter of the tube and partly with the wall thickness. However, from the standpoint of simplification of casing programs, it may be of interest to inspect the comparative importance of collapse and tension of casing of various diameters, as shown in Figure 2.

Since it is desired to indicate the equivalent setting depths for grade "D" casing which is supplied in only the heavier weights, a constant wall thickness of 0.421 inch was selected for all diameters. It is indicated in Figure 2 that, in sizes decreasing from 8⅝-inches, the safe depth in tension is almost constant, while the safe depth in collapse rapidly increases. In the size 6⅝-inch outside diameter or smaller, the collapse value ceases to be the determining factor. This brings up the observation that the smaller sizes of casing will permit with safety a considerable reduction of wall thickness, but reduction of wall thickness lowers joint efficiency in tension. Therefore, there arises a demand for a stronger joint for smaller sizes of casing run to extreme depths.

Incidentally, too much importance should not be attached to the accepted values for collapse without taking other factors into consideration. It is not uncommon in the coastal area to run surface casing to depths obtaining a safety factor of approximately one-half the accepted value. For example, there is a record of several strings of 13⅜-inch outside diameter, 54.5 shop-welded casing being run to 3,200 feet to 3,450 feet, which is double the depth commonly recommended. However, these strings were never bailed out, and were cemented to the surface.

Leaking Joints

In making up the A.P.I. tables* for tensile strength of casing joints, several factors are taken into account such as the pull-out strength in large sizes, cross-section area under the full thread in all sizes, and the yield point of the steel in longer strings. The curve in Figure 2 shows safe depths in tension, based on ultimate strength of the joint. On this basis, the curve is a straight line to about 6,000 feet; but, if efficiency of joint tightness were considered, the slope of the curve, instead of changing at 6,000 feet, would change at about 9,000 feet for 8⅝-inch (or smaller) casing—which, apparently, are the depth and the size at which the yield point in joints becomes critical.

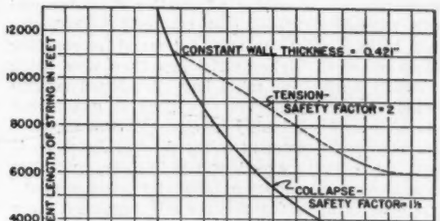

Fig. 2—Safe depths for A.P.I. Grade "D" seamless casing

The influence of yield point is reflected by the experience encountered in some of the deeper wells, where every string of grade "D" casing set at approximately 9,000 feet shows considerable leakage through the threaded couplings. It should be explained that the yield point in threaded couplings is generated by the resultant tension and compression stresses peculiar to the angular direction of threads, but that yield point in straight tension of the same material would occur at a depth of more than twice 9,000 feet.

Every precaution in procedure of cleaning threads, lubrication, tonging, and handling has been observed in running long strings, but to slight avail. Arrangements have been made to run some of the special upset joints, and the degree of success of such joints can be reported in the near future.

Production Methods

Before the advent of proration, it was customary to produce on wide-open flow through the largest diameter of casing that could be practically set. If other conditions require the use of smaller diameters in the future, it is improbable that the question of open flow will interfere.

A second practice that has an important bear-

*A.P.I. Code No. 5: "Recommended Field Practice on the Care and Use of Oil Country-Tubular Goods."

A.P.I.—Presented Mid-Year meeting of American Petroleum Institute, Tulsa, May 14, 1936.

ing on the collapse of casing is the program of cementing. It is regular practice to cement several hundred feet of all oil strings; and, under the assumption that cement is a strong reinforcing agent, it is not beyond possibility that future practices will permit the use of lighter weights than are now being regularly used.

TABLE 1—DATA ON SURFACE CASING FOR WELDING

Casing			Accepted values and equivalent depths for lapweld joints		Actual safety factor based on accepted values	
Outside diameter (inches)	Weight (pounds)	Setting depth (feet)	Collapse safety factor = 1 (feet)	Tension safety factor = 1 (feet)	Collapse	Tension
22	123	1,000	1,218	6,810	1.2	6.8
20	111	1,200	1,250	6,705	1.0	5.6
18⅝	87	1,200	1,276	5,900	1.0	4.9
16	75	5,500	1,968	6,100	0.35	1.1
13⅜	54	5,800	2,152	6,660	0.37	1.1

Necessity for Welded Joints

In brief review, several points relative to the demand and development of joints for casing are recalled. The A.P.I. standard threaded joint was successfully used for the larger sizes of pipe set at shallower depths, since collapse strength takes precedence over tensile strength as the primary factor under those conditions. As deeper drilling progressed, the A.P.I. standard was modified to include the long thread and coupling. Deeper drilling in hard formations resulted in the demand for a semi-flush type of joint in order to maintain the smallest diameter possible. Recent experience from casing set at depths greater than 8,000 feet, and under internal pressures exceeding 3,000 pounds per square inch, indicates the coming obsolescence of the standard threaded coupling. Present practices in production avoid the need of large oil strings, and cementing may possibly develop to the point that collapse value will become relatively unimportant.

Most recent developments indicate a trend toward the use of casing of smaller diameter and wall thickness. These and the added difficulty from leakage create an urgent demand for coupling joints of much higher efficiency than now being generally used. Pipe mills have developed several designs incorporating features such as shouldered joints, upset semi-flush joints, power threads, etc.; and the only comment offered at this time is that they possess excellent possibilities, and that their further development should be encouraged.

In the search for the nearest approach to a flush joint with joint efficiency equal to the strength of the pipe, and at the same time having the economic advantage of lower cost, it is believed that the industry will need to turn toward the possibility of welded joints.

History of Welding Pipe Joints

Passing by the subject of general welding, the first account bearing on the process of welding pipe joints was of 1,000 feet of 4-inch high-pressure gas main, welded in the city of Philadelphia during 1911. By 1914 the art had progressed, and 20 miles of gas line of various sizes had been welded in the city of San Francisco, a large share of which was on the site of the Panama-Pacific Exposition. During the same year a gas utility company of Chicago welded 25 miles of gas main in that city. The process continued to prove itself, and in 1922 there was constructed the first major welding job on 140 miles of 8-inch high-pressure oil line from Mexia to Hensley, Tex. By that time the process of welding pipe lines had passed the experimental stage and had become thoroughly established. At present the process of welding pipe lines needs no defense beyond recalling the disadvantages of the obsolete threaded coupling.

There are also records of the earlier use of welded casing. By 1914 it was common practice to set from 300 feet to 400 feet of casing of large diameter in the Pennsylvania fields. At the same time it was more or less common to weld from 400 feet to 600 feet of large casing used for drive pipe in some of the Indiana and Ohio fields. Welded pipe for shallow surface wells has been common practice since that time.

The outstanding occurrence in the procedure of welding casing occurred in 1915, when a well in Pennsylvania was set with more than 7,000 feet of 4½-inch casing welded into the hole by the acetylene method. At that time welding was the last resort, since a mechanical joint for that depth had not been thought about, much less tried. There was some trouble encountered in landing the casing at 7,181 feet, but the result was sufficiently successful to permit drilling to proceed and establish a new record depth of 7,725 feet. In comparing the equipment and material available then and now, there is a suspicion that our present claims of spectacular performance are at least a bit exaggerated.

Since the adaptability of a process or material depends on comparison of both its performance and its economy, the procedure of welding joints of long strings of casing was discontinued, and interest was not revived until recently. The time consumed in welding the record string of 7,000 feet of 4½-inch casing was more than three weeks. The process employed, commonly referred to as the "ripple" acetylene method, was also very expensive. And to clinch the argument against the adaptability of welded joints, the simple threaded coupling was improved at that time sufficiently to fill the requirements.

The years intervening between 1915 and 1928 saw slow improvement in technique and slight improvement in material. As the tensile strength of pipe material increased, inspection and tests became more rigid; and, upon introduction of the portable tensile testing machine and the free bend test, survival of field welding as an industry was predicated on immediate improvement of the process.

The first outstanding advancement came about in 1928, when the shielded electrode for arc welding was introduced. Bearing in mind the problems of internal stresses and a variety of other faults that both acetylene and arc welding were heir to, the problem of oxide inclusions was probably the worst enemy of the welder. The principles involved in the use of the coated or shielded arc electrode are familiar to most of us. It is sufficient to say that the weld metal and the work are protected from oxidation during the operation by the process of burning the organic material in the coating, which generates a stream of neutral gases, followed by the deposition of a siliceous slag on the surface of the molten metal.

Shortly following the introduction of the shielded arc electrode, the acetylene industry contributed an entirely new process for acetylene welding. Briefly, this process consists of the use of a high-tensile, fast-melting alloy rod, applied from a "backhand" position, with a flame of excess acetylene directed on and across the molten metal so that both oxidation and too rapid cooling are prevented.

These two new processes succeeded in obtaining welds of high strength and ductility and, at the same time, speed of operation had been increased to the point that the welded joint was a close competitor to the mechanical joint. For example, on 10-inch pipe line with the older "ripple" acetylene process, an operator obtained an average of 10 or 12 welds per shift, as compared to 35 or 40 welds with the newer processes.

Recent Progress in Welding Joints of Casing

Introduction of the faster and better welding processes was soon followed by their gradual adoption for welding joints of casing. Naturally, experimentation started with the shorter strings of surface casing.

One pipe manufacturer informs us that since 1931 their company alone has delivered to the operators in California approximately 175 strings of surface casing for welding. Data pertinent to its setting are indicated in Table 1.

While it is of interest to note that the casing

TABLE 2—PULL-OUT TESTS ON WELDED JOINTS FOR CASING

Electric Arc Welds—Shielded Electrodes

No. of Samples	Manufacturer's tensile specification for rod (Lbs. per sq. in.)	Current data: size rod (inches)	Current data: Amperage	Average unit stress (Lbs. per sq. in.)	Average joint efficiency (per cent)	REMARKS Minimum and maximum joint efficiency, nature of fracture, etc.
Sleeve joint		Grade "C" Seamless, 7-in. outside diameter, 22-pound				
4	85,000	3/16	235	79,925	97.4	Joint efficiency: Minimum, 94.6 per cent; maximum, 100.4 per cent. Three samples broke in area affected by thermal change on male end. One sample broke in unaffected metal.
		3/16	225			
Slip joint						
4	85,000	3/16	225			Joint efficiency: Minimum, 95 per cent; maximum, 98.8 per cent. One sample broke in area affected by thermal change of male end. One sample broke clean in pipe. Two samples broke at juncture of weld on extreme end of lapped filet.
		3/16	225	79,225	96.6	
Slip joint		Grade "C" Seamless, 7-inch outside-diameter, 26-pound				
4	75,000	3/16	300	79,100	96.4	Joint efficiency: Minimum, 88.4 per cent; maximum, 105.9 per cent. Two samples broke in jagged line in affected metal. One sample broke through weld. One sample broke in pipe.
		3/16	200			
Slip joint		Grade "D" Seamless, 7-inch outside-diameter, 26-pound				
6	85,000	5/32	250			Joint efficiency: Minimum, 71.3 per cent; maximum, 82.8 per cent. Two samples broke direct through weld deposit. Four samples broke at juncture of weld on extreme end of lapped filet.
		3/16	250	73,470	74.7	
		3/16	175			
Butt weld		Grade "D" Seamless, 7-inch outside-diameter, 26-pound				
6	85,000	5/32	170			Joint efficiency: Minimum, 76.2 per cent maximum, 83.3 per cent. All breaks through center of weld.
		5/32	170	83,000	79.1	
		5/32	170			
Slip joint		Grade "D" Seamless, 7-inch outside-diameter, 13-pound				
4	85,000	5/32	Unknown			Joint efficiency: Maximum, 28.1 per cent; minimum, 34.4 per cent. Field welds. Failed on job by fracture through juncture of weld on end of lapped filet.
		5/32	Unknown	34,000	30.0	
Butt weld						
6	85,000	5/32	170			Joint efficiency: Minimum, 84.3 per cent; maximum, 100.5 per cent. One sample broke through pipe away from weld. Four samples broke through center of weld. One sample broke in area affected by thermal change.
		5/32	170	96,100	91.5	
		5/32	170			
Butt weld						
2	100,000	Back-hand acetylene				Joint efficiency: Minimum, 94.7 per cent; maximum, 104.0 per cent. Field roll welds. Fractured in pipe in area affected by thermal change about 3 inches from weld.
		Single pass		104,350	99.3	

Note: Joint efficiency based on—Grade "C" 82,000 lbs. per sq. in.
Grade "D" 105,000 lbs. per sq. in.

was set at depths exceeding the safe values for collapse commonly recommended, it has no bearing on the problem of welding joints. But it is pointed out that 13⅜-inch outside-diameter and 16-inch outside-diameter casing were welded to depths equivalent to the full strength of A.P.I. threaded joints, which is favorable to the welded joint, if it is recalled that safety factors of 2 to 2½ are usually required for threaded joints.

The welding of surface strings in the Coastal area is now common practice. Although the depths are not so great as shown in Table 1, the actual safety factors are relatively small since most of the surface casing is fabricated in local boiler shops from low-tensile sheet metal with the seam butt-welded by the metallic arc process.

The slip joint has been employed in welding all surface casing, and no other design has been considered; since it is particularly adapted to welding with the electric arc at a high rate of speed. In sizes larger than 10¾-inch outside-diameter there is practically no difference in running time between the welded and threaded couplings.

While the electric-arc process has been utilized in setting welded slip joints, the acetylene process has by no means been neglected. One operator in the East Texas field has established an enviable record in the welding of oil strings. More than 200 strings, mostly 6⅝-inch outside-diameter 18.5-pound line pipe, have been set to an average depth of 3,700 feet, and it has been reported that only one failure of a welded joint has occurred. This record is more remarkable in view of the fact that most of the pipe was second-class material salvaged from old leases, pipe lines, or oil wells.

This casing was mostly welded by the acetylene method employing the butt-weld flush-type of joint. Range I pipe was welded into double random lengths on the pipe rack, obtaining 40-foot joints to be welded in the derrick. The pipe was lined up with regular line-up clamps and checked with a straight edge. Under this method the average running time for 6⅝-inch outside-diameter casing was six joints, or 240 feet, per hour—amounting to a total time of 15 hours, which is about double the time for running standard threaded couplings. From the standpoint of practicability, a threaded coupling on that grade of pipe would not obtain a safety factor in strength sufficient to permit it to be run to that depth. Every physical consideration of this job reflects favorably to the process of welding, and economic consideration made it imperative. All things considered, the success of this experience gives the process of welding joints a very good send-off.

Pull-out Tests of Welded Joints

In anticipation of the use of welded joints for deeper wells, a number of sample welds was tested by pull-out tests. Only three types of joints were considered: the bell and spigot (slip-joint); the butt-weld; and the sleeve joint, a modification of the slip joint consisting of a sleeve or blank collar welded at one end at the mill. Results of these tests are shown in Table 2.

Before commenting on the results indicated in Table 2, it should be added that a number of joints of each design was tested in the lower grades of pipe, lapweld, grade "A" seamless, and grade "B" seamless, and the pull-out tests consistently obtained failure in the pipe. No particular joint can be cited as favorable hence, the selection of any type of welded joint for lower grades of material is left to preference other than design.

But problems remain to be solved in the welding of casing in the higher grades of material. Since there is no wish to minimize the troubles that will be encountered, it should be pointed out that most of the results in Table 2 were derived from prepared tests, and should be regarded strictly as preliminary work.

Joint efficiency of welds on grade "C" seamless casing varied between 88 and 100 per cent, with an average of approximately 95 per cent. Having obtained good results in this particular material, only the slip joint was tested; and the practice of completing the weld with two passes was taken from the experience with welding shorter strings.

Welded joints in grade "D" seamless casing failed to obtain the satisfactory results that were obtained from lower-tensile material. Curiously, the slip-joint welds obtained ultimate tensile strength not quite as high as was obtained in grade "C" material—joint efficiency falling between 70 and 80 per cent, with an average of 74 per cent. The use of high-tensile welding rod applied in three passes obtained very little improvement. The nature of the fractures was such as to indicate that the design of the slip joint limits its tensile strength, which will be briefly discussed in a following paragraph.

Butt-welded joints obtained somewhat better results—varying in joint efficiency between 76 and 84 per cent, with an average of 79 per cent. The design of this joint was the regular 60-degree V-bevel, regularly used for pipe work. Being a position weld, there is no choice other than to use three passes, which makes running time somewhat slower than the slip joint.

In welding grade "D" pipe of thin wall, the slip joint must be discarded. Tests of field-welded joints of 7-inch outside-diameter grade "D" 13-pound obtained a joint efficiency varying between 28 and 34 per cent, which eliminates it from consideration unless much better results can be ob-

TABLE 3—TENSILE STRENGTH AND ELONGATION OF COUPONS FROM BUTT-WELDS

Position Welds—Three Passes

Grade of material	No. of welds	Elongation in 2 in. across weld (per cent)	Average tensile strength (lbs. per sq. in.)	Remarks
Lapweld grade "A"	4	26.5	52,200	
Seamless grade "B"	4	23.2	71,200	All broke in plate.
Seamless grade "C"	6	10.4	81,250	Five broke in weld one in plate.
Seamless grade "D"	6	8.3	83,300	All broke in weld.

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tained. Butt-welds in the same material obtained joint efficiency varying between 84 and 100 per cent, with an average of 92 per cent. The butt-weld consistently shows to advantage over the slip-joint in tensile strength.

Several of the new type acetylene welds were cut out from a pipe line of the same material. Each showed joint efficiency of approximately 100 per cent. Although these were roll welds instead of position welds, consistent results such as these should encourage the use of acetylene welding for high-tensile casing.

On the whole, the results of these pull-out tests showed a wide variation in results; and it is obvious that considerable time and expense must be expended in developing the proper procedure to obtain uniformly maximum results. However, welding has a vantage point from which to start, in that a joint welded with reasonable care consistently obtains higher joint efficiency than a standard threaded coupling in the respective size of pipe or grade of material.

Effect of Welding on Grain Structure

It is well known that the thermal changes brought about by welding obtain a non-uniform condition in the grain structure of the metal. The nature of these changes is indicated in the photomicrographs shown in Figure 3.

Grade "D" casing contains a carbon content varying between 0.40 per cent and 0.45 per cent, which makes it easily sensible to heat treatment. The normal grain structure in the "as rolled" condition is indicated on the extreme right side of samples A and B.

The thermal effects of the electric arc are indicated in sample A. Grain structure varies from a very fine texture adjacent to the weld to the original normal structure in the pipe within a distance of less than one-half inch. This variation in grain structure corresponds to respective heat treatments—varying from a rapid quench, adjacent to the weld, to a normal draw in the original structure. The characteristic of the electric arc explains these variations in heat treatment. The high temperature is applied over a narrow area for a brief time, followed by a rapid conduction of the heat into the cold body of the plate, from which results a condition identical to the effect of a water quench.

The thermal effects obtained by the acetylene torch vary somewhat from the electric arc, as indicated in sample B. The grain structure indicates an annealed and possibly an over-heated condition immediately adjacent to the weld, and varies to the original structure within a distance of about 3 inches from the weld. Before transition to the original structure, there occurs in a narrow area a refinement of grain which is the effect of rapid cooling.

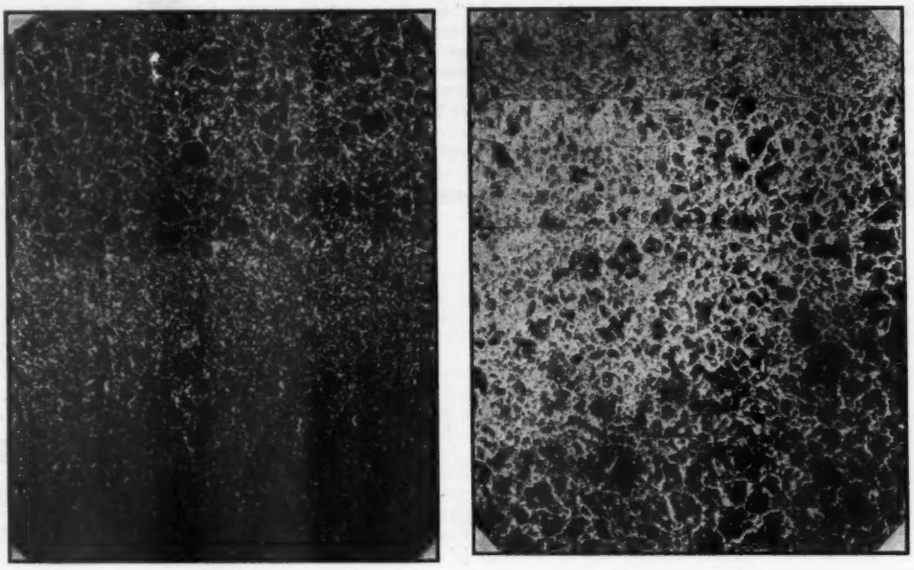
Although somewhat different in characteristics, it is seen that either type of welding develops a non-uniform condition near the weld. Briefly, a refined grain structure obtains physical properties of increased strength, hardness, and embrittlement and its incorporation in a pipe wall of normal grain structure results in concentration of applied stresses at the point of change in structure. In fact, any sharp variation of grain structure within narrow limits results in a non-uniform condition detrimental to the pipe. The degree to which physical properties vary with heat treatment and grain structure is slight in low-tensile material, but considerable in high-tensile material.

The Effect of Welding on Physical Properties

To avoid attachment of too much importance to the theory of heat treatment and its effects, some of the actual physical properties obtained from welded specimens should be shown. Coupons were cut from butt-welded joints of several grades of pipe and tested for tensile strength and elongation, with results which are shown in Table 3.

Results in Table 3, in general, substantiate what might be expected after the comments on the effect of welding on grain structures. Since the 2-inch (gauge) points were measured across the narrow weld deposit, the value for elongation is a measure of elongation of the plate rather than the weld. It is pointed out that grade "A" or grade "B" material obtained satisfactory elongation, indicating that the extent of embrittlement occurring in that material is negligible. However, the effect of embrittlement is appreciable in grade "C" material, and is strictly unsatisfactory in grade "D." The effect of severe embrittlement, plus the internal stresses that are probably coincidental, is likely to obtain a joint of non-uniform physical properties and unreliable performance.

A most noticeable feature of the results shown in Table 3 is the fact that welds of high-tensile casing invariably obtain fracture through the deposited metal of the weld. On considering the welding process as applicable to the materials of high tensile strength, it is found that the average strength of the weld is slightly more than 80,000 pounds per square inch, compared to the pipe material of more than 100,000 pounds per square inch. Until the welding industry develops a material more suitable for the purpose, the joint efficiency that can be expected from welding remains comparatively low with respect to grade "D" casing. For casing of lower strength, a satisfactory result can be obtained by welding.



Sample A—Electric arc weld Sample B—Acetylene weld

Fig. 3—Grain structure adjacent to Weld—Grade "D" seamless casing (Magnification 50 times)

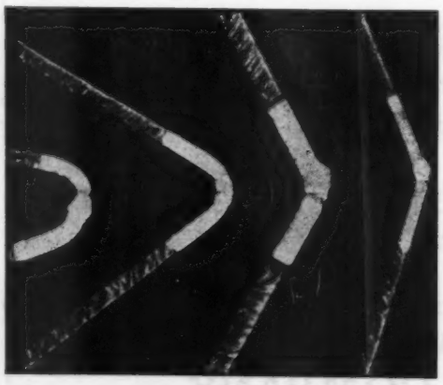


Fig. 4—Coupons from butt-welded seamless pipe identify from left to right: Grades "A," "B," "C," "D." Free bend tests

Bend Tests—Indicative Characteristics

Although elongation is one measure of ductility, it is probable that the bend test obtains a result that is more easily translated by the observer. The results of bend tests are shown by actual photographs in Figure 4.

The samples shown in Figure 4 are the average results that are obtained from bend tests of the several grades of seamless pipe by bending with the crest of the weld in tension. As would be expected, the angle through which the pipe can be bent without fracture decreases from a maximum of 180 degrees in the grade "A" sample to approximately 45 degrees in the grade "D" sample.

Bend tests are to some extent indicative of several characteristics of the welding process: (1) It is apparent that the deposited metal, probably because of the puddling action, alloys with and assumes the properties of the base metal. (2) Embrittlement resulting from thermal changes is unimportant except in grade "C" or grade "D" material. (3) The ordinary pattern of the deposited metal obtains a mechanical effect similar to that of a V-notched design.

The behavior of the weld metal toward the base metal is quite generally recognized, and several societies have recommended standard specification with reference to current size and type of rod, etc., for several classifications of work. Although a lot of work remains to be done on the technique of welding, it is certain that best results can be obtained by the use of smaller welding rods, proper control of current density, and by the application of a multi-bead weld deposit.

Very little can be offered from the material standpoint to offset the tendency of welding to cause embrittlement adjacent to the weld in grade "C" and grade "D" pipe. It is common practice to obtain the higher tensile properties by the addition of carbon and manganese, of which alloys carbon is especially inimical to the welding process. It would be better for a material to possess both high tensile strength and easy weldability, but under present conditions the one property is obtainable only at the expense of the other. The adoption, by several pipe manufacturers, of the contact welding process for the fabrication of pipe establishes a trend toward the use of alloys other than carbon to obtain higher tensile strengths. It would be beneficial to the welding industry if this trend became established practice with all pipe manufacturers.

It is observed that fracture from bending usually occurs immediately adjacent to the weld, and the defect is commonly accepted as unavoidable, and is ascribed to the embrittlement expected from the welding process. Admittedly, this opinion is based partly on fact; but the effect of embrittlement can be somewhat minimized by the use of a proper pattern or design of the weld deposit. The effect of design on the ductility of the weld and its adjacent area in the base metal is illustrated by the photographs in Figure 5.

Figure 5 illustrates the comparative effects obtained from bending away from a full-crested and a flush-crested weld in grade "D." The illustration was carried further on the grade "C" sam-

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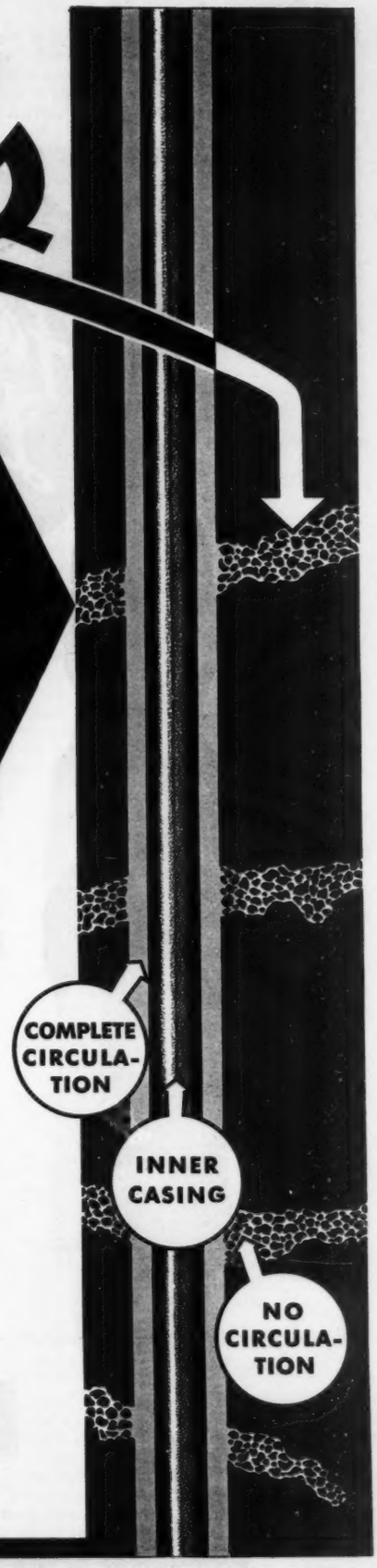

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ples by bending the first sample in its original form, followed by bending a planned sample from the same weld. In both cases the tendency of the full-crested weld to obtain a notch effect at the edge of the weld is illustrated. Another viewpoint may be that the thick pattern of the weld forms a stiff section, resulting in a concentration of applied stresses at the filet. From any viewpoint, it is obvious that the technique of welding should be improved before a complaint is made on the quality of the base material. To balance this last comment, it might be added that the ordinary weld obtains a notch effect that is practically duplicated by the V-threads of the standard coupling.

Comparative Features of Designs of Welded Joints

The designs ordinarily considered for welding joints of casing are: the sleeve joint, the slip joint, and the V-beveled butt-weld. Each of these designs is familiar, and needs but brief description. The sleeve joint is a modification of the slip joint, consisting of a blank collar welded onto the pipe at the mill. The slip joint is the ordinary bell and spigot design, varying slightly in dimension and beveling according to the manufacturer. The butt-weld is most commonly used in pipe welding, and is the simplest in design.

Each design has certain features that are advantageous. The sleeve joint obtains the advantage of easy alignment, which is aided by both the long close-fitting sleeve and by the abutting ends of the casing. There is also the feature of the interior flush joint which might be of slight advantage. The design of the sleeve also allows the use of regular elevators instead of the slip type that is required for other welded joints. The sleeve joint in other features is identical to the slip joint.

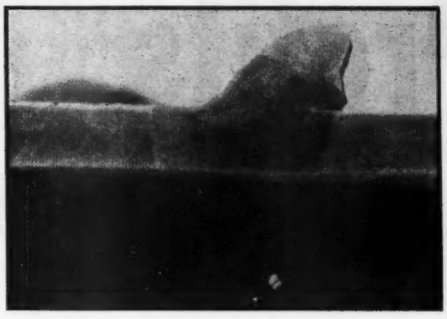
The primary advantage of ease and speed in welding is claimed for the slip joint. This is true; since it is essentially a "flat" position weld requiring two passes, and by running double lengths of casing the time for welding is but little more than for screw couplings. On the other hand, the butt-welded joint is a "vertical" position weld requiring three passes, and the time required for running is from 50 to 70 per cent more than for screw couplings. For instance, with two welders working, the average speed for running 6⅝-inch casing is seven to nine joints per hour.

The very feature of the slip joint that obtains advantage of speed is the one that offers the most serious disadvantage to quality. Because of the easy position, and in order to obtain speed, the operator is liable to apply a poor weld. The butt-weld joint is welded from a difficult position, which is an inherent safeguard against an inferior weld. In fact, some manufacturers use the method of placing the work in an "overhead" position in order to obtain precision in the application.

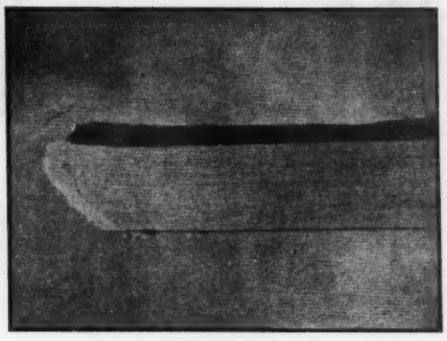
The results of the tensile tests shown in Table 2 indicate that the slip joint obtained a unit tensile strength of approximately 70,000 pounds per square inch in either grade "C" or grade "D" casing, which is evidently the critical strength for this design. The results indicated that the ultimate strength of the butt-welded joint was limited only by the strength of the welding material. The type of fracture that generally occurs on either design of joint is shown by photographs in Figure 6.

The photograph of the slip joint reveals several characteristics of that type of welded joint: (1) The area of embrittlement in the pipe wall from the arc flame is indicated by the darker shaded area defined by thin distinct lines; (2) the two beads of weld metal are distinguishable by the gradation in shading; (3) the presence of a cold-lap is shown in the weld metal. In considering the mechanics of this design, it is obvious that the change in the direction of applied stresses obtains a torque or an eccentric loading effect in the area of the weld. The result is that failure occurs at the juncture of the weld with the filet edge or at top of the deposited metal along the line of embrittlement. With this design it is apparent that a unit tensile strength of approximately 70,000 pounds per square inch is the ultimate that can be expected. The butt-weld does not display these weaknesses. The design does not develop the effect of eccentric loading, and tensile tests obtain fracture usually through the body of the weld and occasionally along the line of the change in grain structure. From experience to date, it is apparent that the butt-weld will obtain ultimate tensile strength equal to the strength of the welding material.

With reference to the selection of design for welded joints, it is believed safe to say that the slip joint or sleeve joint is preferable for all grades of casing obtaining tensile strength less than 75,000 pounds per square inch, and that the butt-weld joint is preferable for casing of higher strength.



Slip joint

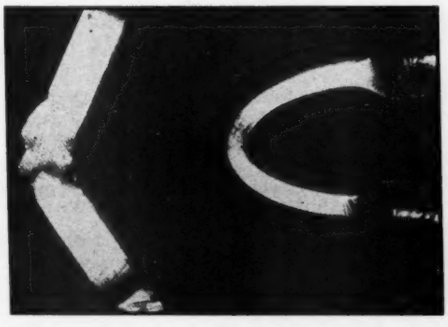


Butt weld

Fig. 6—Failure of welds on Grade "D" casing

Full-crested weld Low-crested weld

Grade "D" casing



Regular weld Same weld planed flush

Grade "C" casing

Fig. 5—The effect of the pattern of the deposit on the angle of bending. Free bend tests

Miscellaneous Problems

In developing the process of welding joints, several points of more or less importance will probably present themselves. The problem of pulling and resetting is a serious one for the slip joint. The time consumed in running long strings of butt-welded joints may result in difficulty in breaking circulation or in the settling of cuttings to bottom, which would require the use of a casing shoe similar to a soft-formation core head to provide for rotating and circulating. Presence of oil or gas presents a fire hazard that would not permit of the use of welding torches. In fact, the appearance of numerous defects now unforeseen can be expected in the development of welding casing. But in comparing it to the development of other new processes, there is seen no defect so serious as to prevent its further progress.

Economic Advantage

The item most encouraging to the development of welded joints is the economic one. The standard threaded coupling adds to the expense of casing; and the recently developed mechanical joints that utilize upsetting of the pipe and complex designs of couplings, of course, add to the expense. It would seem that the simplicity of the welded joint should be welcomed alike by both the manufacturer and by the operator.

Conclusions

It is admitted that, from the single standpoint of tensile strength, there is no urgent demand for the development of welded joints for casing. But the demand is somewhat strengthened by the experience of leaking couplings in the deeper producing wells; and in view of the trend toward the use of flush-joint casing, the outlook for welded joints is brightened.

The strongest argument in favor of welded joints is the economic one. And unless some unforeseen difficulty appears, it is believed that the development of welded joints for casing is entirely possible.

Acknowledgment

Acknowledgment is made to the various tube mills and to the manufacturers of welding equipment for information furnished on their respective products. Acknowledgment is also made to the several operators and engineers who furnished their assistance in the preparation of this paper.

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Department of Standards and Tests to Hold Meeting

The annual meeting of the Department of Standards and Tests will be held at State College, Pa., May 29; headquarters for the meeting to be at the Nittany Lion Inn.

In the morning there will be an inspection of the petroleum refining laboratory maintained at Pennsylvania State College and also an inspection of a new chemical engineering laboratory. After luncheon, Hugo A. Kemman, patent attorney for the Pennsylvania Grade Crude Oil Association, will present a paper respecting "Inventive Research at State College."

In the evening, Dr. W. A. Gruse, Senior Industrial Fellow, Mellon Institute of Industrial Research, will give an address on "Engine Carbon—A Monkey Wrench in the Wheels of Progress." Doctor Gruse will present a paper prepared jointly by himself and Dr. C. J. Livingstone, his associate in the Mellon Institute.

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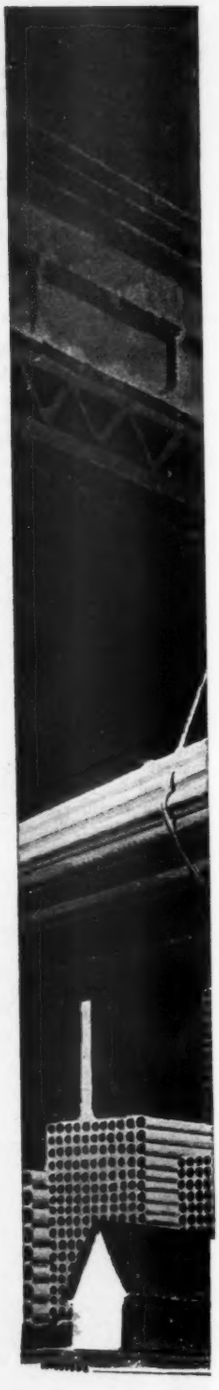

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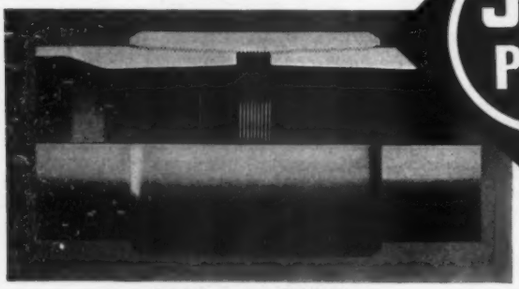

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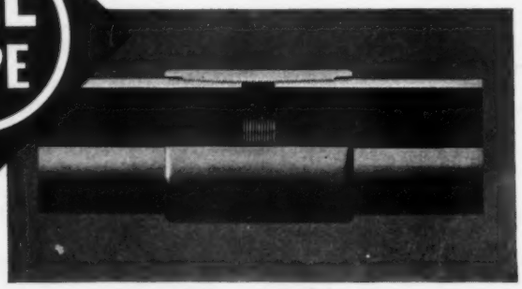

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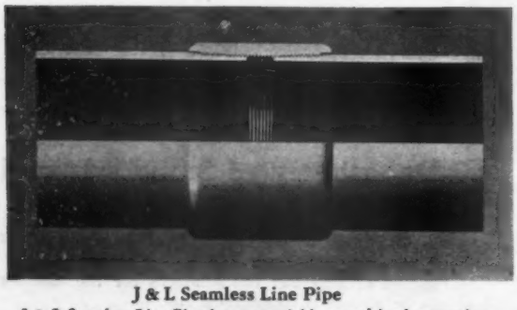

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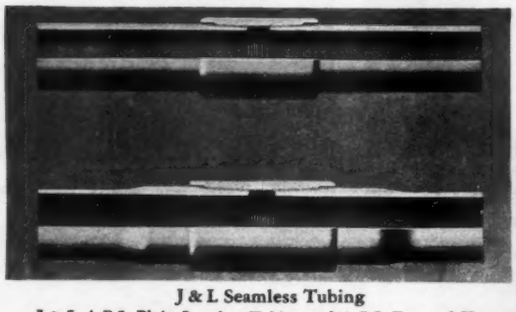

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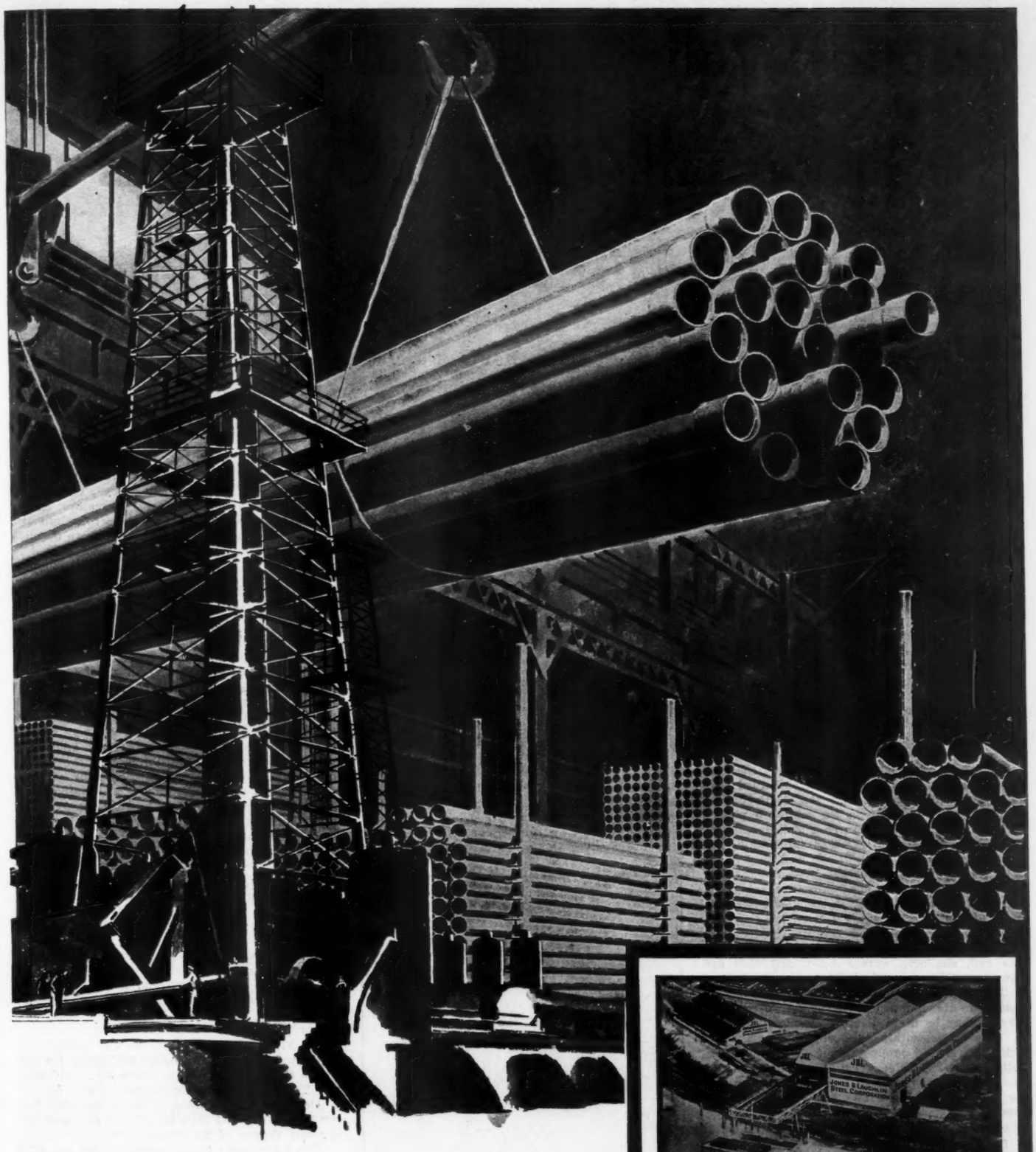

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Practical Value of Subsurface Pressure Surveys in Oil Well Operations

By W. H. OSGOOD
Consulting Engineer, Pasadena, Calif.

A.P.I.—Subsurface data now available will provide valuable information for guidance in production problems. This paper was presented before Pacific Coast District Spring Meeting, American Petroleum Institute, Los Angeles, California.

The determination of subsurface pressures in oil wells provides information generally not otherwise available, which experience has proved is a valuable guide to more profitable operation. The information may be of a positive character indicating that full capacity to produce is not being realized, or of a negative character which indicates that no greater quantity of oil is available and therefore further expenditure in trying to secure greater production is unwarranted.

The application of data secured from subsurface surveys, outside of a few of the major operators in California, has received more attention in the Mid-Continent and Texas fields where the technique of making the surveys and the interpretation of the results really originated. But the conclusions applicable to the single stratum production of these regions are greatly modified in California fields by the multiple producing strata of a single zone and the problem becomes complicated when two or more zones are open to the same well.

The data resulting from a subsurface traverse are the pressures existing at any number of points from the top to the bottom of a well, or to as low a point as it is physically possible to run the recorder. The reservoir pressure is taken to be equivalent to the maximum pressure developed opposite the producing formation in a well, when the well has been closed in long enough for conditions to have approached equilibrium.

Figure 1 shows a method of plotting the data secured from the traverses of a hypothetical well. The well-head elevation and the depth of the main points of interest in the well are plotted on the vertical scale. Pressures, and temperatures, if taken, are plotted to the horizontal scale. All small circles, except those at the well-head elevation, represent the measured pressures at the depths shown; all well-head pressures are gauge pressures. Curve A-B-C-D shows the depth-pressure distribution of a static (closed in) traverse. Curve F-G-H shows the pressure distribution within the well while flowing at some particular rate and, similarly, curves J-K-L and M-N are flow curves for successively higher rates of flow.

The items of practical value that are derived from the data obtained from subsurface pressure surveys may be divided into two general classes, (a) the items within the control of operators which affect the production of their individual wells and (b) the items that determine field and reservoir conditions which have an influence on the operating methods and policies. The more important items in each classification are as follows:

Individual well data:

1. Initial formation pressure.
2. Productivity factor.
3. Potential production.
4. Fluid levels.
5. Tubing depth.
6. Effective depth of well.
7. Optimum production rate for greatest ultimate recovery and lowest lifting costs.
8. Change from gas lift to pumping.
9. Effectiveness of pumping equipment.
10. Compressor requirements for gas lift installations.
11. Cleaning out operations.

Field and reservoir data:

1. Existence, extent, and movement of a gas cap.
2. Pressure maintenance to secure minimum lifting costs and regulate encroachment of gas and water.
3. Direction of drainage.
4. Probable areas of best production.
5. Compressor requirements for repressuring operations.
6. Available reserves as a basis for proration.

INDIVIDUAL WELL DATA

1. Initial Formation Pressure

There is only one chance in the life of any well of determining the initial pressure existing in each formation, and that chance occurs only when the well is being drilled. The use of a pressure recorder in conjunction with the formation tester gives the pressure of the formation open to the tester. This is much more accurate than estimating the pressure from the number of joints of the drill pipe filled by a mixture of mud, water, and oil of unknown density and temperature which the formation pressure is able to sustain.

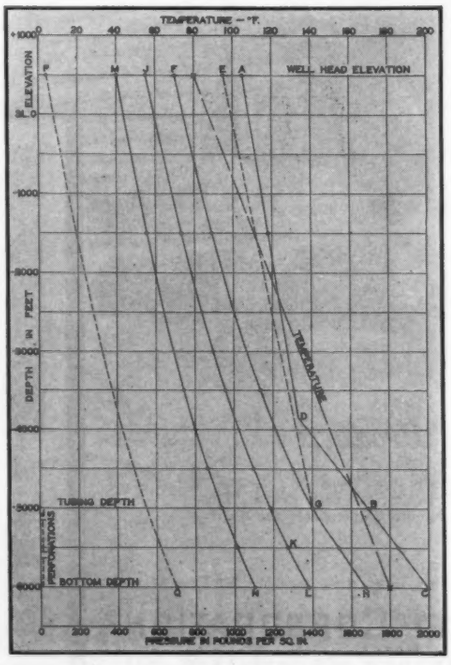

Fig. 1—Method of plotting data from the traverses of a hypothetical well

2. Productivity Factor

The productivity factor is defined as the number of barrels of oil produced per day for each pound difference between the closed-in (static) and producing bottom-hole pressures. It is sometimes called the productivity index. This difference in pressure, the differential pressure, causes the fluid to move from the reservoir into the well; the amount of fluid that will move depends upon many factors pertaining to the fluid and to the reservoir, but, in general, the productivity factor may be taken as a measure of the average permeability and the thickness of the producing zone adjacent to the well.

In the past, the productivity factor has been based on the oil produced, but the more logical basis, which is now being recognized as better, is the total volume of the reservoir's contents produced. The total volume produced includes all water, oil and gas reduced to its volume under the reservoir conditions of pressure, temperature, and solution. (1, 2) The main obstacle to this practice is the present lack of definite knowledge as to the conditions of solution and the formation volume of the gas in the reservoir.

An initially low value of the productivity factor when compared to the values for nearby wells, may indicate that the well has not been thoroughly cleaned out, for if any mud remains on the face of the producing sand and any water has penetrated into the sand, the permeability will be lowered. The decrease of the productivity factor with time may indicate the clogging up of the perforations. On the other hand, a gradual increase of the productivity factor may indicate the establishment and cleaning out of drainage channels to the well. A field or lease map of the values of this factor should indicate the areas of low and high productivity, and when such a map is used in conjunction with a contoured pressure map, it may be possible to determine the cause of low productivity (3, 4).

In Figure 1, the values of the productivity factor would be the amount of production for any of the flow curves, say, the curve J-L, divided by the difference in pressure between C and L.

One of the advantages of the productivity factor is the fact that it is useful and available under any degree of production curtailment.

The advantages to be gained by the use of a depth pressure traverse instead of the normally used surface pressures for determining the productive factors are apparent when it is considered that the surface pressures are not the same as the formation pressures, and are greatly affected by many unknown factors such as the height and density of the fluid column, frictional losses, and heat losses. Most of these unknown factors are eliminated by measuring the pressure at the bottom of the well, and hence more reliable data are obtained. If there were no other practical application of depth pressures, this use alone would readily justify the expenditure required to make measurements. A typical example of the saving that may be affected by the use of this type of information is shown by the following assumed conditions: A well is completed in a known high-

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ly productive zone and the initial production obtained by natural flow is considerably below expectations. Without bottom-hole pressure data from which the productive factor may be determined, the operator, in an attempt to increase production, would probably replace the tubing with a larger string to reduce the flowing pressure. This operation, including either killing the well or pulling and rerunning the tubing under pressure, would cost from $3,000 to $10,000, depending on the material and equipment available for the purpose, and would be a direct loss if no additional production were obtained. By the use of the information available from the depth pressures obtained at various rates of flow or the productivity factor, expenditures of this type can be prevented and more definite information obtained as to production that may be expected by any changes in the surface and subsurface equipment.

3. Potential Production

The capacity to produce, or the potential production of a well, for all practical purposes is the daily quantity of oil that the well will yield. The open flow test, with the attendant work and expense of preparation and the resulting hazards from operating a well at its maximum possible rate of production, was assumed to give the value of this potential, but due to the existence of so many modifying factors such as the size of the flow string, length of the shutdown period prior to the test, method of producing, the potential production was always open to question (5).

It has been determined that, as a result of subsurface pressure tests, the productivity factor multiplied by the static bottom-hole pressure, with deductions made from the latter item for the necessary surface pressure for handling the oil and for the pressure loss within the flow column, will give the productive capacity of the well. This may be done graphically, as shown in Figure 1, by moving the depth-pressure curve M-N over to the position P-Q, where a surface pressure of 40 pounds per square inch is assumed as being sufficient to handle the production at the surface. In reducing the well-head pressure from point N to point P, the bottom-hole pressure would be reduced from point N to possibly point Q, a somewhat greater pressure difference than the surface change. This bottom-hole difference in pressure may best be arrived at by using the ratio of the bottom hole differentials to their corresponding production rates, determined from the runs shown by the curves F-H, J-L, and M-N.

Well potentials have also been determined by plotting the differential pressures against the corresponding rates of production and extrapolating the curve, which is usually plotted to such coordinates as to make the curve a straight line, to the maximum available pressure at which point the corresponding indicated production rate was taken as the capacity of the well (6, 7, 8). The references show examples of how some of these rate-differential curves have been plotted. There is probably a definite set of coordinates for each type of control as described by Herold, but no one set is applicable to all types.

And finally, quoting Kelly, "Relative productivity between wells is believed to be proportional to productivity index when multiplied by static bottom hole pressure" (4).

4. Fluid Levels

The depth of the fluid level in or below the tubing of a well is shown directly on a plot of the pressure data obtained by a traverse, such as at point D of a static run and point G of a producing run. In a pumping well, the pressures shown to exist by a recorder located in or below a gas anchor, may be changed into terms of fluid depths and plotted, if desired. If a fluid level exists while a well is producing by flow or gas lift, a traverse will give the data from which its location in the tubing can be determined for that

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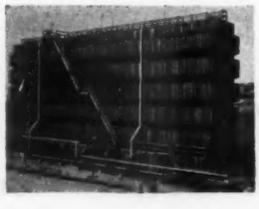

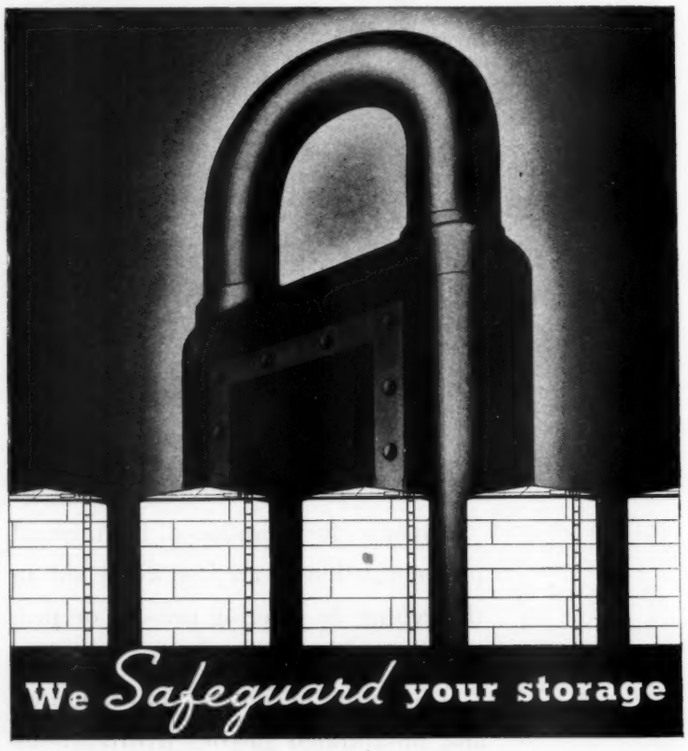

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particular rate of production. The pressure in a column of liquid is greater for any unit of depth than in a column of gas, so the depth pressure curve shows the line of pressure in the liquid lying at a flatter angle than the steeper line for the gas column. The fluid level location is at the depth indicated by the intersection of the liquid and the gas lines (9). If there is any water or mud in the bottom of a well, its presence is shown if some pressure readings are made therein, by a slope of the curve flatter than for an oil gradient.

If a fluid level exists in the annular space between the tubing and the casing, its location can be approximately determined by calculations based on the well-head and depth pressures. It is understood that one of the major companies has devised a method directly measuring this level.

In general, the relationship between the well-head pressures, as shown by the surface gauges, and the bottom-hole pressure of a well is a matter of the location of the fluid level in the well; the higher the fluid level, the greater will be the counterbalancing action on the bottom-hole pressure and, therefore, the lower the pressure remaining to be recorded by the surface gauges.

Methods of determining the fluid levels by computation are available, and if the basic data, such as the density of the gas-oil mixture and of the gas itself under the conditions obtaining throughout the depth of the well, are correct, the fluid level can be located (10, 11).

5. Tubing Depth

Initial tubing depth can be estimated from the pressure data secured during a formation test, it being remembered that the particular pressure being measured will be modified by the pressures in any other formations that may be open to production. While this information can assure a submergence relative to the static column of fluid, the fluid level may drop to the bottom of the tubing when the well is flowing. Pressure traverses taken at a number of different rates of flow should show the corresponding movement of the fluid level and, therefore, the proper depth for the tubing in order to have its lower end in the oil and not in the gas part of the column.

In pumping wells, the pressure data may be changed into terms of fluid head and the most practical pump depth then determined as outlined under subheading 9, "Effectiveness of Pumping Equipment."

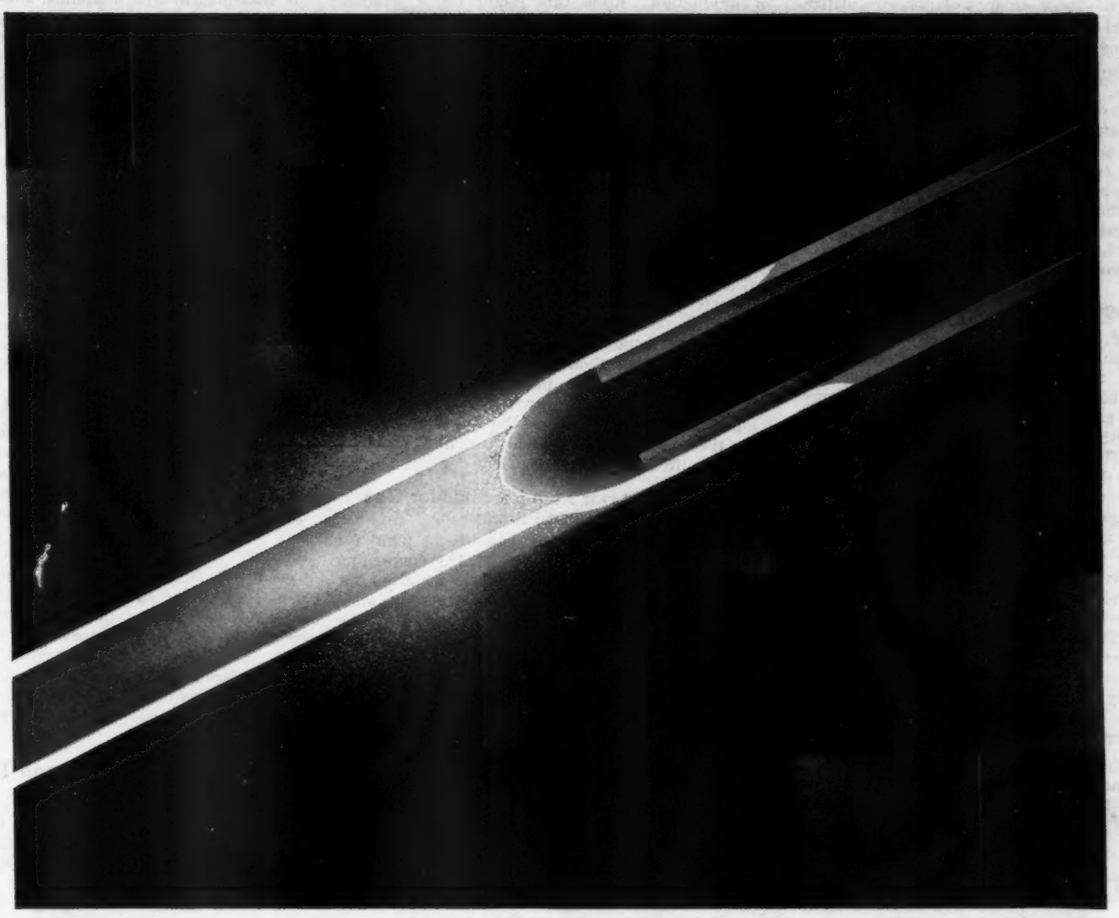
6. Effective Depth of Well

The depth of the pressure recorder is known at all times while making a traverse, usually by means of a measuring device. Any accumulation of sand in the bottom of the well is shown by the depth to which the instrument can be lowered. It is sometimes possible to tell whether this sand is packed tightly or is loose. In either case, the depth of the perforations equivalent to the depth of the accumulated sand has been made less effective for the production of oil. By the use of the so-called "dummy bomb," which is nothing but a small bailer, samples of any material existing at the bottom may be secured. The presence of any water can be detected even though no cut is shown by the production (12). These items of information are mentioned as being available incidentally, while a well is rigged up for pressure measurements.

7. Optimum Production Rate for Greatest Ultimate Recovery and Lowest Lifting Costs

The greatest ultimate recovery from a well, and also the extension of a well's flowing life for the longest possible period, add to the financial returns to be secured. These results are secured through the maintenance of the reservoir pressure at the highest possible value (13, 14). This subject is still in an indefinite stage of development and only the most general statements can be made, but the work is progressing and definite principles may be available in the future.

Pressure surveys at intervals show the decline in the reservoir pressure resulting from the total production of the reservoir's contents, the oil, gas, and water, during that interval. The higher rates of production reduce the reservoir pressure much faster and with greater and more uneconomic expenditure of energy than do the lower rates; there



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is usually some moderate rate of production at which the ultimate production of oil through the most economical use of the reservoir energy should be a maximum (15). It is believed that the analysis of the differential pressure-rate of production curve may show the rate of production at which the minimum amount of pressure utilization per barrel of production would occur.

The flowing life of a well depends upon the pressure in the reservoir and upon the amount of available gas. The maintenance of the pressure for this purpose alone by the reduction of the rate of production will prolong the period during which the minimum lifting costs will prevail. If the solubility relationship of the gas and oil produced by a well or a field has been determined (2, 16, 17), these data used in conjunction with the drop in pressure occurring with the cumulative production can be made the basis for estimating the flowing life of a well or property.

8. Change from Gas Lift to Pumping

Among the possible methods for determining when to change from a lift to pumping operations, the following method is available: Depth pressures should be taken while a well is being produced by the gas lift and the productivity factor determined with the well producing near its maximum rate. The determination of the "fill-up" curve or the data relative to the various rates at which the reservoir supplies oil to the well against various back pressures existing opposite the producing zone, gives the data on the amount of oil that is available. By computing the cost per barrel of recovery for the two methods of operation, the relative economy can be found, and the time at which the change should be determined (18). The main consideration in this particular study are: (a) the pressures that are held on the producing formation and (b) the volumetric capacity of each method of production.

9. Effectiveness of Pumping Equipment

The term "effectiveness" is used by Marsh to indicate the ratio of the pressure utilized in producing a well to the total pressure available for that purpose. It is the differential pressure divided by the static bottom-hole (reservoir) pressure (19).

This measure of operating conditions is of particular value in the study of pumping well installations, though it is applicable to all methods of production. From this factor for a pumping well, the amount of fluid available can be determined, this giving the information as to the size of the pump, the length of stroke, and the strokes per minute to be employed. The depth at which the pump should be set is controlled by the necessary pressure conditions in a well. Generally, the lower that it is possible to place the pump, the greater the production, but this consideration is modified by such items as maintaining submergence, prevention of sanding up, the reduction of water by maintaining some back pressure on the producing formation, etc. (20). The usual system of installation in a pumping well is the setting of an arbitrarily selected size of pump at some depth which, though a series of tests and changes requiring a considerable expenditure of time and money, appears to yield the greatest production. Even then it is not known whether the maximum possible production is being obtained. A fill-up curve drawn from pressure data secured in a well will show the quantity of fluid that the reservoir will yield for any practical pump depth (21).

10. Compressor Requirements for Gas Lift Installations

The installation of a new compressor plant for gas-lift operation requires knowledge concerning the starting and operating pressures required for any well and of the possible quantity of production, so that the volumetric requirements of the compressors can be determined. As is sometimes the case, the operator has a compressor which he wishes to use, if possible, with the sizes of cylinders already mounted, but at the most with one or two new cylinders. Then the problem is to set the tubing at such a depth as to secure the required submergence and volume of production within the capacity of the compressor, or if that arrangement would not be satisfactory, to determine what changes would be necessary to secure the possible production.

In either case, the change to gas lift operation should be anticipated while the well is still flowing and its pressure characteristics and productivity factor obtained. If the foregoing items of information are available, definite plans can be made with some assurance of obtaining a satisfactory initial installation and thus avoiding the expense and loss of time incident to the trial and error method of determining the proper conditions.

In general, the volumetric requirements of a gas lift vary with many factors, but it is believed that the volume of gas required is primarily a function of the pressures used to start and maintain flow in the well.

11. Cleaning Out Operations

The natural pressure in a well opposite the producing formation should be determined prior to, and then not exceeded during any cleaning out operations which entail the use of pressure for maintaining circulation or washing, in order to avoid sealing the face of the producing formation and forcing water back into the sand pores.

FIELD AND RESERVOIR DATA

The main items of information that can be derived from the pressure surveys of individual wells which pertain to a lease or a field as a whole are based upon the pressure (22) and productivity factor maps used in conjunction with structural maps. The greater the amount of well pressure data available, the more valuable and useful will be the results obtained and the more specific will be the information concerning the influence of different production policies upon the results to be expected from any one well.

In some fields, the subsurface pressures are taken in each well at frequent intervals; in other fields, representative wells are selected and the pressures measured at regular intervals (23, 24, 25, 26, 27, 28).

1. Existence, Extent, and Movement of a Gas Cap

When the data resulting from the static pressure traverses are plotted for the individual wells, the depth of the contacts of the gas and the oil are shown graphically in certain cases. If the well is in a gas-cap area and the tubing is above the top of the perforations, that is, above the top of the producing zone, the fluid level will be low and the well-head pressure high. The depth of the gas-oil contact as located in the different wells may be plotted and the extent of the gas cap estimated. Surveys made at intervals of time thereafter would show the movement of the edge of the gas area consequent upon the reduction of pressure due to the withdrawal of the reservoir's contents (29). It may be possible to determine the rate of production at which the gas cap will not expand unreasonably.

The development of local gas caps resulting from too intensive withdrawals can be found in this manner. In fields such as the East Texas field where no free gas existed initially, since all the gas present was in solution, periodical pressure surveys of selected representative wells were made and the rate of production fixed so that the reservoir pressure would be maintained above the value at which gas would appear (30).

This subject includes, besides the purely engineering phase of determining the extent and movements of a gas area, the question of the equitable share of production for a gas area tract (29, 31).

2. Pressure Maintenance to Secure Minimum Lifting Costs and Regulate Encroachment of Gas and Water

The lowest possible lifting costs obtainable during the life of a well exist during the flowing life. By maintaining the reservoir pressure at as high a point as possible and for as long a period as possible, the flowing production of the field will be prolonged, the expansion of the gas area prevented, and local areas of water encroachment avoided. In water drive fields, the rate of production should be low enough to allow the ad-

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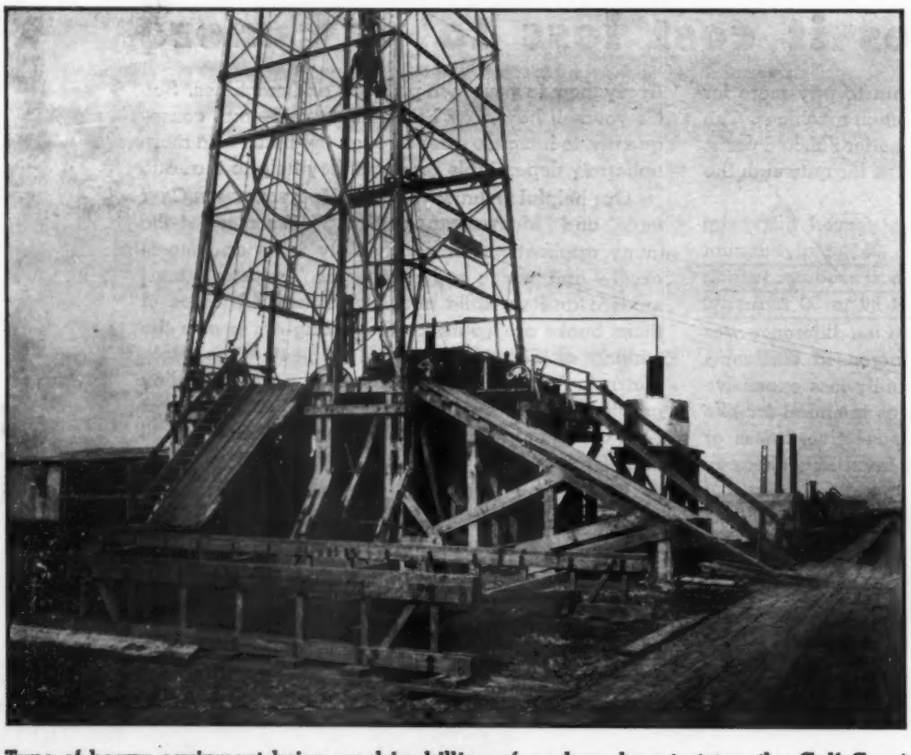

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This subject covers such a wide field that those interested are referred to A.P.I. Production Bulletin No. 210, December, 1932, which contains papers on this subject by Wilde, McWilliams, Lacey, and Ritter. (Also 32, 33, 34.)

3. Direction of Drainage

Drainage, used in the sense of migration of reservoir contents across subsurface translations of property lines, is possible only from areas of relatively high pressure to areas of relatively low pressure. In using the well pressures for this purpose, it is necessary to refer and correct the individual well data to some common datum of elevation for purposes of comparison due to the proportionally higher pressures at greater depths in wells located down structure. A pressure contour map shows the probabilities of any tendency for drainage.

Pressure "sinks" which have been caused by intensive local withdrawals of the reservoir contents should be avoided for they naturally create drainage from surrounding areas, particularly in areas having high productivity factors.

While drainage is usually considered in terms of oil that may migrate, the mobility of gas makes it the principal migrating fluid. A high gas-oil ratio well producing an amount of oil equivalent to that produced by a low gas-oil ratio well probably sets up a reservoir pressure gradient in favor of itself due to its taking more than its share of the reservoir's contents. And since the pressure gradients within the common reservoir result from the venting and withdrawal of the fluid therein, it would appear that to prevent inequitable production, equivalent amounts of the reservoir's contents would have to be produced by offset operators rather than equal amounts of oil alone (35, 36, 37). This again brings up the fact that volumetric withdrawal of the reservoir's contents is the only basis for equitable curtailment since the energy in the reservoir is directly dependent on the gas pressure available.

4. Probable Areas of Best Production

Areas from which the most prolific and profitable production is to be obtained are naturally those having the highest productivity factor, i.e., the greatest permeability, and the highest reservoir pressure. With maps showing the distribution of these two factors, the most prolific areas may be indicated, areas for future development ascertained, and drilling policies formulated, depending upon an operator's requirements. It should be mentioned that, in some cases, high bottom-hole pressures may precede the front of an encroaching water drive; any such item must be considered in connection with the pressure indications.

Most of the proration work done on the basis of the data secured through subsurface pressure surveys lends itself to the study of the productivity of the tracts and their wells. This type of work should be of real value in studies concerning further development and the valuation of developed properties.

5. Compressor Requirements for Repressuring Operations

As in the case of determining the required capacity and pressure of a compressor plant for operating a well on a gas lift, the pressure requirements of a repressuring plant can be ascertained by the subsurface pressure surveys. In this application, the volume consideration is usually settled by the amount of gas that is available and not by any certain amount being necessary.

The initial step of a project is a survey to determine the pressures existing at the formation to be repressured, in the wells which may be used for input wells. This work is sometimes done by determining the fluid level with a bailer and computing the bottom pressure by the use of an assumed uniform density of the fluid column. Frequently, a trial compressor is set at the well, connected up, and the maximum pressure that the unit can generate is applied in an effort to determine whether this maximum is high enough for the requirements. Since this procedure requires both time and money, and with the possibility that the results may be of a negative character, it should be a standard practice to first determine the pressures as they actually exist and then omit the remaining work on any wells which are shown to be unsuitable for use as input wells, because of low productivity factor or high formational pressure.

6. Available Reserves as a Basis for Proration

There have been numerous systems of proration tried during the last few years. A popular system, judging by the continued use and apparent agreement thereon, has been to determine allowable production based in part on the pressure conditions found to exist in the reservoir (38, 39).

It is interesting to note how many of the apparently successful proration systems now in effect follow in part the original suggestions on this subject by Millikan (40, 41), Moore (42), Wilde and Moore (43).

The considerations entering into proration are so numerous, as shown by the various programs that have been tried and methods suggested, that the subject can only be discussed here to the extent of mentioning the part played by the subsurface pressure conditions. The Progress Report of the Topical Committee of the American Petroleum Institute entitled "Essential Engineering Factors in Allocation of Production," as published in the 1934 issue of "Drilling and Production Practice," is the most detailed and comprehensive study of the subject available. Its recommendations for a system of proration are based on the belief that:

"....equity in a prorated pool is attained when each tract is allowed to produce currently an amount of oil in proportion to the

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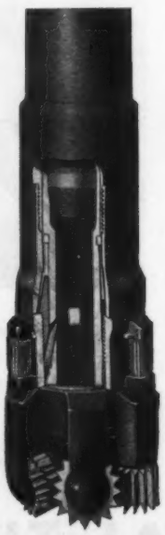

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remaining recoverable reserves pertaining to the tract."

Among the factors entering into that system are the productivity factor and the bottom-hole pressure: these factors taken together give the potential, and then, the bottom-hole pressure is used by itself as a factor for correcting the allowable production in case that pressure differences develop in the reservoir from the use of this system. A standard method of determining the mean effective formational pressure is needed in this connection.

It should be understood that while the use of the bottom-hole pressure and productivity index factors does not assure success or equity in any system of proration, they are the fundamental factors in the relative withdrawals and should therefore be included.

Some Future Applications

The following items, while not universally applicable at the present time, will probably be of great practical value in the future and are therefore mentioned here.

One of the items of importance is the energy analysis of flow problems being developed by Sage and Lacey (44, 45) under Research Project 37 of the American Petroleum Institute. The pressures and temperatures of the flowing fluid at the top and the bottom of the flow string are the controlling data for this analysis. The study of the design of flow strings will probably be based upon similar data obtained for different points throughout the depth of the flowing column of fluid.

Another future application deals with the estimation of underground reserves; the initial formation pressure and its subsequent changes will be important factors in this study. Methods of estimating reserves are being developed and some descriptions of the work done have been published but this subject will not be discussed here (46, 47, 48, 49).

In closing, thanks are extended to those who through their help, suggestions, criticisms and editing have assisted in the preparation of this paper.

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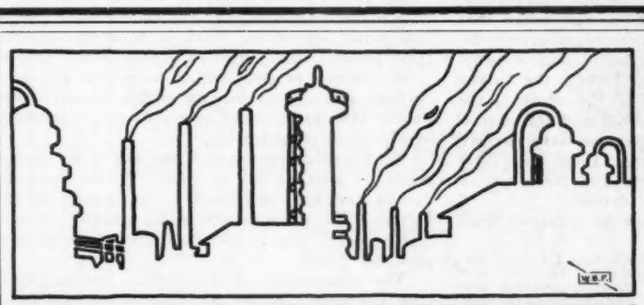

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Oils Are Not Improved With Use; Reclaiming Methods Seldom Adequate

In the article page 114 of the March 19, 1936, issue of the Journal, these viscosities were given —New oil 398, used oil 696, etc. Does this mean that motor oil is really a better oil after use? What factors tend to make higher viscosity of an oil after it is used? If ordinary crankcase oils were properly reclaimed wouldn't the reclaimed oils make better oils than the originals? —M. McD.

The questions asked are based on the article, The Laboratory Engine Testing of Motor Lubricants, by M. Fairlie. The Oil and Gas Journal, March 19, 1936, page 114. The conditions of this engine set-up and the test procedure are fully explained in the article. The results do not suggest that the conclusions are intended to be applied to the broad subject of the quality of used oil or the complicated questions surrounding reclaimed oils. The tests were devised for the purpose of demonstrating oil oxidation and the relation of the products to cylinder wear, ring sticking and bearing corrosion.

The cooling fluid entered the engine at 242/245° F. and left at 250° F. The initial charge of oil was 1 gallon and replenishment made at 16 and 32-hour points on a run of 30 hours, after samples had been withdrawn. "Over any series of tests on similar viscosity oils, the oil consumption rate changes very little, provided that very wide differences in ring sticking are not found, so that the oil consumption factor has no great significance."

The viscosity results are to be considered simply as incident to this method of test and cannot be interpreted as reflecting the quality of used lubrication oils.

Ordinary automobile crankcase oils cannot be properly reclaimed except by methods that are more complicated than those used in the refineries for the manufacture of the original oils. The refiner, handling large volumes, may make several grades of oil from the crude oil; also, methods may be applied for the re-refining of used oil to permit the recovery of several grades of oil. Some of these may be of high quality but the quantity would probably be so low that the cost would be far above the price at which oil of similar quality could be purchased from the refiner.

Used oils may contain a great variety of substances, including minerals and metals, several acids or acid-forming compounds, alkaline materials, soaps and greases, frequently paint, to introduce products of a vegetable, animal and even fish origin. Colors and odors are produced in addition to conditions that do not readily respond to simple chemical treatment. Investigations have indicated that oils drained from crankcases are so unlike that any process for the recovery of a good quality oil should be continually adjusted. A proper control of all of these conditions appears to be too expensive to permit a general application of the idea.

Relation of Gum in Copper Dish to Carbon Deposits in Engine

Is there a definite relation between the gum in gasoline and the carbon deposited in the automobile engine? What I mean is, could one be reasonably correct in stating that a gasoline of 30 ingm. gum, copper dish, content would deposit 2/3 oz. of carbon per gallon of gasoline consumed?—D. G. R.

There are several factors, in addition to the fuel, that are involved in the quantity of carbon that may be deposited in a gasoline engine. The literature contains many articles on the subject but the extensive work reported from the Millan Institute will serve to help arrive at a reasonable answer to the question.

Gruse states that the factors which govern the formation of coke deposits in gasoline are: (1) Engine running conditions, temperature, speed, and load. (2) Oil consumption. (3) Time since cleaning. (4) Amount of dust in air. (5) Air fuel mixture ratio. (6) Engine design and condition. (7) Characteristics of fuel. (8) Characteristics of oil. Disregarding these except the fuel, experiments gave the figures shown in the second column; the additional data being calculated.

CARBON DEPOSIT ON HEAD

	Gm./l. of fuel	Gm./gal.	Oz./gal.
Antiknock gasoline ..	8.1	30.6	1.07
Motor gasoline	8.3	31.4	1.10
Benzol blend	9.3	35.2	1.24
Cleaner's naphtha	14.6	55.3	1.95
Kerosene	14.3	54.1	1.91

The copper dish gum value while open to some objections, is not without significance. The data following are from runs where oil, air-fuel ratio and engine conditions were kept constant. The engine was a single valve-in-head unit.

RELATION OF COPPER DISH GUM TO CARBON DEPOSIT

Gum mgm.	10	100	300	800
Carbon gm./l.	4	6	7	14

"In a more recent study the influence of performed gum on intake manifold gum deposits has been observed; the changes in combustion chamber deposits were also measured in certain significant cases. In this study it was found that the intake mixture temperature very largely determined the extent and location of gum deposits from a gum-bearing gasoline. When the intake temperature was high (say 175° F.), much of the gum dropped out in the manifold and the carbon deposits in the combustion chamber were normal. When the intake was unheated, there was little or no deposit in the manifold and there was a small increase in the carbon deposit."

Additional information may be obtained from the references.

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Burning test, hours, min.	16
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Cloud point, °F. max.	5
Flock Test	negative
Sulfur per cent max.	0.13
Color, Saybolt, min.	16

At the end of the burning test, the flame shall not be smoky and not appreciably reduced in size, chimney no more than slightly clouded and no appreciable hard incrustations on the wick.

Invitations for bids may include a request for a sample to be furnished for photometric tests. Loss not over 5 per cent between a one hour and six hour test. Six candle power required after six hours burning.

Reference: Federal Standard Stock Catalog, Sec. 4, Part 5, VV-K-211.

Production of Carbon Black and Methods of Manufacture

Could you give me a statement showing the total production of carbon black in the United States at this time? I understand that this material is made from natural gas by several different methods and would like to have a brief description of these. Is the composition of the gas an important matter?—T. R. C.

A description of the carbon black industry has been given by I. Drogin and the material following is in the main abstracted from his article.

The first commercial plant for the production of natural gas black was established in 1872 at New Cumberland, W. Va., where the gas flames were directed against soap stone slabs and the deposited black scraped off. E. R. Blood patented the roller process in 1883 and L. J. McNutt the channel process in 1892.

The quantity of carbon black produced in 1935 was 390,000,000 pounds, of which 211,000,000 pounds were used in the United States and 139,000,000 pounds exported.

There are four well-known methods for making carbon black from natural gas; these are:

1. Channel, disk or roller process, in which the gas is burned in hot houses through lava tips, in a limited supply of air and the flame impinged on relatively cool moving channels. The black is removed from the channels by scrapers, falls into a screw conveyor and passes to the packing house.

2. Lewis process, burning the gas in a furnace with a limited air supply; the smoke being passed into water where the black is allowed to settle, filter pressed, dried, reduced to powder and packed.

3. Gastex process, which burns the gas in a furnace, through special tips with a regulated volume of air and the black extracted from the smoke by electrical precipitation.

4. Thermatomic process, the gas being decomposed by heat at 900 to 1,300° F., the products carbon and hydrogen leaving the furnace at the bottom. The black is cooled by passing through water spray and is then collected in bags and packed.

The composition of the natural gas is important, the factors being: Nitrogen, sulfur and gasoline content. With normal gas, 0.31 per cent nitrogen, the channel process yields 1.32 pounds per 1,000 cubic feet, but only 0.068 pound from a gas containing 41.27 per cent nitrogen.

Sulfur causes corrosion. Gas containing more than 1.5 grains of hydrogen sulfide, or more than 30 grains total sulfur, per 100 cubic feet is sour. Removal of the sulfur is said to render the business unprofitable but recent legislation in Texas, producing 85 per cent of the black, makes it mandatory to burn only sour gas for the production of carbon black.

Gasoline in natural gas may range from 0.1 gallon to over 3 gallons per 1,000 cubic feet. Removal of the gasoline is desirable and profitable. The gasoline-free gas yields a more uniform black and of better quality than when the gasoline is not removed.

During the year 1935 the larger part, 350,000,000 pounds, of carbon black were made by the channel process. The greatest consumer of the black is the rubber industry, about 182,000,000 pounds last year. The treads on tires require about 50 per cent, based on the rubber content. This is equivalent to 3.3 to 11.9 pounds per tire.

References: Drogin, Chem. Met., 43, 139, 1936. Street, Ind. Eng. Chem., 25, 559, 1932.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

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PROBLEMS FROM READERS

Edited by T. F. Smiley

Yes, Corrosion of Pipe Lines Can Be Retarded by Use of Electricity

Maybe you will laugh at me for asking such a question, but a very intelligent oil man that I am acquainted with told me there was a way now of preventing the rusting of pipe lines by running an electric current into them. It sounds queer, but I want to ask if this is true, and if it is true how is the operation done? I would like to understand more clearly what conditions produce corrosion of oil pipe lines, how corrosion is found and what is done about it.—E. T. H.

Use of electricity to protect pipe lines from corrosion is still in an experimental stage. It is generally agreed that electrochemical action causes the corrosion of pipe lines. The chemical action between the pipe wall and the surrounding soil causes generation of small electric currents owing to the difference in potential between the soil and the pipe. These currents cause pits in the pipe at points where they pass into the soil. So it becomes evident that if these currents are not allowed to leave the pipe there should be no corrosion.

"It may be readily seen that the only way in which we may be sure that no current is leaving the pipe is to have a current entering the pipe at all places on the surface," says Starr Thayer, of the United Gas Public Service Co., who provides the answer to your question. "In order to accomplish this it is necessary to have a stronger force pumping current onto the surface of the pipe than any force which might be discharging current from the pipe. In order to clarify this statement, let us suppose an oil or gas line under prssure had a hole in the pipe wall. The result would naturally be a loss of oil or gas into the soil. If now a head of water could be built up around the pipe equal to the pressure within the line, there would be no loss of gas or fluid. The force tending to cause the electrical currents to leave the pipe may be compared to the pressure in the pipe, and the water pressure developed outside of the pipe compared to the electrical protection which is forced onto the line.

"Since we are dealing in what is known as direct current we must have available a source of that type of power. The negative terminal of this power is attached to the pipe line and the positive terminal to a mass of iron, preferably scrap cast-iron, which is placed in the ground. When power is turned on current is forced from the ground bed or metal scrap into the oil, then through the soil onto the pipe wall and back to the power supply, completing the circuit. The problem is now reduced to obtaining electrical pressure between the pipe and the surrounding soil of sufficient intensity to overcome the pressures tending to force current from the pipe. Experience indicates that if the electrical pressure between the pipe and the soil is .3 of a volt higher than that of the pipe there will be no corrosion. Voltages of less than this amount will of course retard corrosion. A pressure greater than .3 of a volt is unnecessary to overcome soil corrosion, will do no additional good and wastes power.

"A method of applying this type of protection with few variations will be the same for any type or condition of lines. The problems presented, however, will vary over such wide ranges that it is necessary to consider each line to be so protected as a separate engineering problem in itself.

"The first problem presented is to determine that the pipe line is electrically continuous. Oil lines generally are electrically continuous. Gas lines on the other hand often use a mechanical coupling which breaks the circuit, requiring a bond of heavy copper wire to be placed across the coupling. The next step is to ascertain, as nearly as possible, the amount of power that will be required to protect the line and the most economical spacing to use between stations."

Any piece of unprotected steel will deteriorate if it is buried in the ground, and this deterioration will be more rapid if there are definitely corrosive elements, such as cinders, in the soil. This is what happens when steel pipe for transporting oil is buried, except that instead of the surface wasting evenly over its entire area the corrosion usually concentrates at small points. This results in pits, which in time penetrate the wall of the pipe, and oil begins to leak.

When a failure occurs in a pipe line as a result of corrosion, which means a pit through the pipe, it is found by the line walker, who usually covers the line on a regular schedule, by a drop in pressure at the pumping station or by discovery of a shortage of oil at the next receiving station. Sometimes the leak is so small that no pressure drop is disclosed and no shortage in the volume of oil is detected. Nevertheless, such a leak can cause appreciable loss over a period of time. Such leaks must be found by the line walker.

A common procedure in repairing a small pit is to drive in a wooden plug to stop the leakage of oil and then to place over it a small steel patch clamped to the pipe with a gasket between the clamp and the pipe. Such a patch can be applied by one man. This is regarded as a temporary job only, the patch to be welded on later if the surface surrounding the pit will permit a welding job and the pipe itself will not have to be replaced.

Various unexplained causes exist for corrosion of underground steel oil trunk lines. Those recognized include different types of soil corrosion, stray electrical currents, miscellaneous conditions on the pipe line right of way, and oil leaks.

WHY THEY CALLED IT *Dump*

The dump business began with the early shipment of oil by bulk boats down Oil Creek and the Allegheny River in Pennsylvania. The bulk boat was an open flatboat, or barge, to which oil was conveyed, either in barrels or through a crude wooden pipe line, from different wells. This oil, bought by the boat owner, was dumped into the boat. Soon tanks were erected at convenient points along Oil Creek. Oil, bought by the owner of a tank, was dumped into it to await the arrival of a boat customer. These tanks came to be known as "dumps." Operators of dumps might be regarded as the original oil brokers. They did a flourishing business after pipe lines were introduced and before the system of connecting these pipe lines directly with tanks at the wells was adopted.

Making and Operating Wash-Tank Used in Heating Oil Emulsions

I would greatly appreciate some information concerning wash-tanks for use in heating crude emulsions. What size is it usual to make them? Are they always of steel? If you could tell me also the best way to operate these wash-tanks in order to break up emulsions I would be much obliged.—N. E. E.

Wash-tanks vary widely in point of size, material and the source from which the operators get them. In the Seminole field are found 210-bbl. steel welded, 315-bbl. steel welded, high 500-bbl. bolted steel, 1,000-bbl. bolted steel and 500- and 750-bbl. wood vapor-pressure tanks.

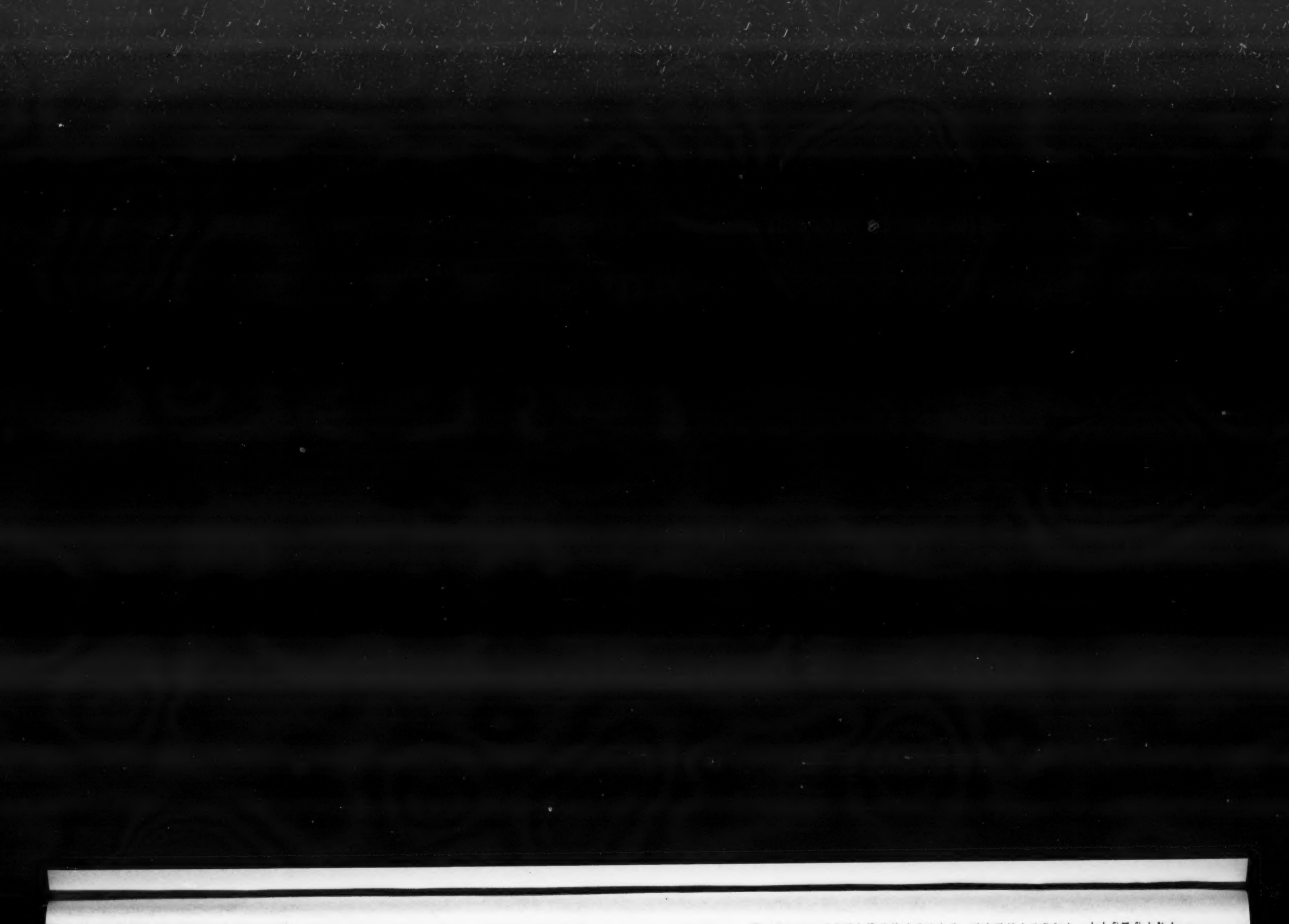
The wash-tanks are equipped with a conventional gas separating flume, or "boot," either outside or inside the tank, into which the oil is discharged from the boiler heater. The gas separates from the oil and enters the tank from the top while the fluid goes down the boot and enters the tank about a foot from the bottom into a "spreader." This spreader, made in the form of a cross, is nearly as long as the diameter of the tank. A series of small holes is drilled or cut into the under side of this spreader so that the fluid, in being discharged from the spreader, will be broken up into a series of small streams. In rising through the 6 to 10 feet of water in the wash-tank the emulsion is evenly distributed over the area of the tank and thoroughly heated to the temperature necessary to effect a "break."

The oil in moving upward through the water becomes heated, and with the attendant reduction in viscosity it rises faster than the emulsion. Thus the emulsion is exposed to contact with the water and the proper conditions are present for coalescence of the globules of water in the emulsion with the water in the tank.

The water maintained in the wash-tank is usually about two-thirds of the total fluid in the tank with the fluid level 1 to 2 feet from the top chime of the tank. The free water coming into the tank with the oil and that from the emulsion are discharged from the tank by the use of a siphon discharge set so that the water level in the tank remains fairly constant. In using the ordinary siphon little if any pressure can be held on the tank and still maintain the constant water level. It is highly desirable to maintain 2 to 16 ounces pressure on the tank to keep a maximum quantity of gas in solution in the oil in an effort to hold the gravity of the oil as high as possible. To accomplish this a rather unique siphon has been developed that will operate efficiently against these low pressures and also against a slight vacuum without any variance of the water level in the tank.

Settling-tanks are used in cases when the oil coming from the wash-tanks carries a small percentage of free water that requires additional time to settle out before the oil goes to the stock tanks. As a rule, the oil in coming from the wash-tank enters the settling-tank at a point about a foot from bottom, is evenly distributed over the area of the tank through the use of a spreader like that previously described, and is usually covered with about a foot of water.

Treating chemicals are applied to the emulsified crude in several different ways. Two common methods are known as the "lead line" and the "down-the-hole." In the first-mentioned method the chemical is injected into the lead line at some point between the well and the heater. In down-the-hole treating the chemical is poured or pumped down the annular space between the tubing and the casing.



California Field Report

By
L. P. STOCKMAN

EASTERN OIL CO'S. WILDCAT MAY OPEN NEW DEEP FIELD

LOS ANGELES, Calif., May 25.—The Eastern Oil Co. appears to have discovered a new oil field in Los Angeles Basin and although the company's wildcat, No. 1 Del Rey Land & Water, in section 22-2-15, has not yet been given a production test, it is showing considerable oil and gas. The well has threatened several times to blow out and approximately 250 tons of weight material have been used up to the present in order to keep the gas under control. The Eastern's test has made this area a real hot spot and operators are wildly scrambling for acreage, as it has been a long time since a new field has been found where there has been so much unleased acreage up to the last minute. Practically all of the small tracts ranging in size from 5 to 50 acres have been leased and spirited bidding is going on between major companies for the California Dairy Farm property of about 200 acres and located within a stone's throw of the Eastern Oil Co.'s test, and is in line with data indicating that the potentially productive acreage is out in the flat area toward the northwest and not toward the Del Rey Palisades.

The Eastern Oil Co. No. 1 D. R. L. & W. is located east of the Playa Del Rey field and the axis of the new structure should parallel that of Playa Dey Rey, which, like other California fields, has a northwest to southeast trend. The Ohio Oil Co. No. 18 Recreation, out on the north flank of the Playa Del Rey field, indicates that there is no structural connection between the two areas, although a nodular shale, fairly compact conglomerate, and oil sand resting directly on schist is a characteristic common to both sections. The nodular shale was logged in the Eastern Oil Co.'s wildcat at 7,268 feet, and, while not definitely determined, the conglomerate is believed to have been encountered at 7,335 feet. This would give the well 67 feet of nodular shale and 4 feet of conglomerate. The well blew out for a period of about two hours a few weeks ago from a depth of 7,339 feet and this is generally believed to be approximately the depth at which the conglomerate was penetrated.

Structural Conditions

The Eastern Oil Co.'s wildcat is located in a relatively flat area practically devoid of any topographic indication of structure. The deep test confirms the belief that discovery of the Playa Del Rey field by the Ohio Oil Co. several years ago was of great importance from an exploration standpoint, but it took operators several years to appreciate this. The importance of this discovery became quite evident, however, when the Republic Petroleum completed its discovery well in the El Segundo district last year. This successful work opens up the entire western rim of Los Angeles Basin for prospecting work and renders void the results of previous exploratory drilling. Very few of the deep tests drilled along the western rim of Los Angeles Basin were carried down to the basement, which in this case in schist, and consequently they do not mean a thing.

Sheer Zone

Although it has not been definitely determined, recent developments tend to indicate the probable existence of a sheer zone along the western rim of Los Angeles Basin approximately paralleling the Newport-Beverly sheer zone, which extends from Beverly Hills in the north to Newport in the south. Along this gentle arc of the Newport-Beverly sheer zone, which extends down through the center of Los Angeles Basin, are located such prolific fields as Long Beach, Huntington Beach, Seal Beach, Dominguez, Rosecrans and Inglewood, most of which have already developed commercial production in rocks of Pliocene and Miocene age and still have deeper zone possibilities. In contrast with this future expectancy, fields located along the possible sheer zone extending along the western rim of Los Angeles Basin will become extinct upon depletion of present known zones because the schist or basement complex is the bottom of the productive geologic column. The theoretical line of sheering extends southeastward from the Playa Del Rey field to about the most easterly tip of the Torrence field. The El Segundo and Lawndale fields line up very uniformly along this theoretical and possible line of sheering.

Practically all of the potentially productive acreage in the possible new field opened up by the Eastern Oil Co. is held in large blocks, although there is a possibility of town lot development if the apex of this structure is located northeast of the Eastern Oil Co.'s wildcat. This is of special interest in view of the fact that correlation work on shallow wells indicates that the possibly productive acreage will be located north of the Eastern's test. The Union Oil Co.'s Del Rey lease is located close to the Eastern Oil Co.'s wildcat and consequently the former should have a number of locations available for work if the Eastern Oil Co. succeeds in developing commercial production. The Pacific Electric Railway Co.'s right-of-way and tracks traverse what is at present considered potentially productive acreage and will probably be leased to either the Associated Oil Co. or the Standard Oil Co. due to stock ownership in both companies by the Southern Pacific Railroad Co. All of the acreage involved in this potentially productive field is located in Los Angeles County and outside the corporate limits of Los Angeles city.

New Gas Field

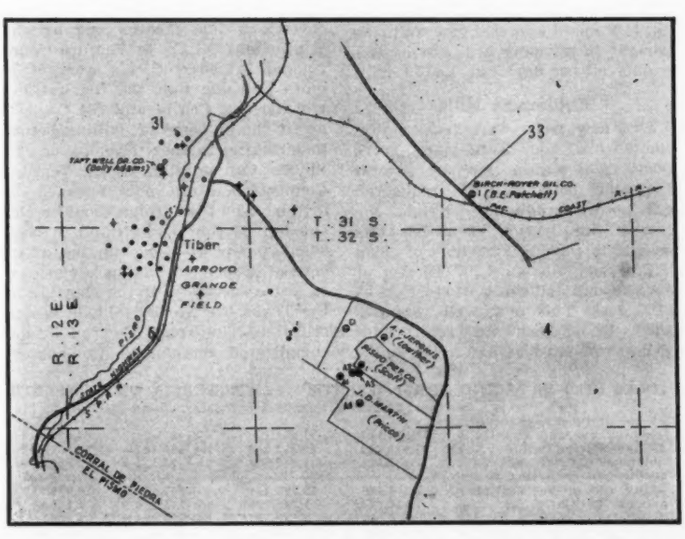
The Standard Oil Co. has discovered a possible new gas field in San Joaquin County, 60 miles from San Francisco, but it may require the drilling of another test before conclusive evidence will be available. The Standard's wildcat is located on McDonald Island in section 24-2-4, about 13 miles west of Stockton. Two potentially productive gas zones have been found, but neither zone has shown any considerable volume of gas or reservoir pressure. A production test reveals that the volume of gas is on the border line between commercial production and uneconomic production. The first gas zone was picked up at 4,250 feet and a formation test showed the well to be good for approximately 8,000,000 feet of dry gas per day. Upon the conclusion of this formation test, the company deepened the hole to 5,224 feet and a formation test indicated a potentiality of 8,500,000 feet of dry gas per day. The B.t.u. value of gas from the upper horizon was rather low, testing approximately 600 thermal units, but the gas in the lower zone was of a better grade and averaged approxi-

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 10		May 3			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	151,541	527,098
Gasoline	189,377	27,054	162,240	23,177	2,482,788	2,618,333
Kerosene	.....	.....	.....	.....	595,419	592,040
Foreign exports:						
Crude oil	65,545	9,078	314,829	44,976	3,439,154	3,962,161
Fuel oil	194,078	27,725	115,910	16,559	1,645,416	4,426,750
Diesel and gas oil	268,376	38,339	72,468	10,353	1,964,527	1,410,405
Gasoline	159,671	22,810	91,915	13,131	2,206,373	1,732,590
Kerosene	.....	.....	.....	.....	380,593	434,036
Other unfinished oil	.....	.....	.....	.....	13,375	66,161
Coastwise-domestic:						
Crude oil	184,102	26,300	109,678	15,668	2,562,931	2,223,941
Fuel oil	83,869	11,981	145,983	20,855	3,180,170	3,026,130
Diesel and gas oil	959	137	17,142	2,449	508,660	326,613
Gasoline	211,524	30,218	327,937	46,848	4,961,572	3,060,460
Kerosene	754	108	3,584	512	86,133	42,757

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	157,258
Gasoline	.....	.....	.....	.....	71,960	.....
Kerosene	.....	.....	.....	.....	.....	149,715
Asphalt	.....	.....	.....	.....	60,950	71,325
Lubricants	.....	.....	.....	.....	18,129	12,381
Foreign exports:						
Crude oil	84,154	12,022	85,373	12,196	1,115,528	832,282
Fuel oil	18,211	2,602	.....	.....	1,216,505	585,455
Diesel and gas oil	.....	.....	15,112	2,159	302,931	400,802
Gasoline	98,235	13,034	131,466	18,781	1,217,454	869,910
Kerosene	3,261	466	.....	.....	246,681	216,283
Lubricants	3,150	450	10,180	1,454	103,917	74,411
Coastwise-domestic:						
Fuel oil	212,402	30,343	215,647	30,807	2,923,412	2,680,059
Diesel and gas oil	36,127	5,161	15,247	2,178	231,077	98,883
Gasoline	307,266	43,895	86,332	12,190	1,929,692	1,577,681
Kerosene	3,160	451	.....	.....	58,932	18,109



Arroyo Grande area of San Luis Obispo County, California, where extension work has proven successful during past several months

mately 1,100 thermal units. Standard's field department is of the opinion that the two horizons can be produced simultaneously and that the company's initial well under normal flow conditions should be good for approximately 20,000,000 feet of dry gas per day. The company has approximately 11,000 acres under lease on the McDonald and Roberts islands and tentative location has been mapped for a test to be drilled on Roberts Island in the immediate future. The importance of the Standard's discovery on McDonald Island is conjectural in view of the limited amount of development work undertaken up to the present time and until a more detailed analysis is available with respect to the thermal value of the commingled gas from the two gas horizons.

Lessened Demand

Drilling operations in the various gas fields throughout the state has been reduced to a minimum due to a lessened demand by domestic consumers and which will prevail until the winter season. The past winter was rather mild and only one gas field, Buttonwillow, was put on commercial production. A temporary flow test for a period of 30 days was conducted to determine the potentiality of the Semi-Tropic gas field of Kern County, but only a limited quantity of gas was withdrawn from the field and delivered to the Pacific Gas & Electric Co. The Pure Oil Co., which has discovered a gas field of problematical value in the Chowchilla district of Madera County, recently spudded in No. 3 Chowchilla and this test is at the present time making good footage. The deep gas zone discovered by the Pure Oil Co. has a low B.t.u. value, but the shallow gas horizon yields a gas of better value and should become of commercial importance if the volume is sufficiently large to justify exploitation. Holly Oil Co. has abandoned No. 1 Padden in section 16-2-5, Tracy gas field, San Joaquin County, as the sand was barren. The Seaboard Petroleum Co. abandoned No. 1 Welch in section 10-16-13. Top of the Etchegoin was logged in this well at 2,200 feet and top of the Temblor was picked up at 2,400 feet. Drilling operations were concluded at 4,455 feet. This is the fourth test drilled in search of commercial gas production by Seaboard Oil Co. in conjunction with the Associated Oil Co. and the General Petroleum Corp.

Round Mountain

Two new wells were chalked up in the Round Mountain field of Kern County during the early part of the current week and a check of development work under way indicates the probable completion of three more within the next few days. Honolulu Oil Corp. started off the week by completing No. 67 in section 18-28-29, which was brought in pumping 571 bbls. of relatively clean 16.7 gravity oil per day from 2,106 feet. A short time later Shell Oil Co. completed No. 4 Caldwell, in section 7-28-29, which registered an initial production of 436 bbls. of 14.6 gravity oil from 1,955 feet. Potential producers scheduled for immediate completion are Honolulu Oil Corp. No. 1-C in section 20-28-29 and Shell Oil Co. Nos. 11 and 12 on the Caldwell property. The Shell is building rigs for six new wells to be drilled on the Caldwell property at an early date and, since it is the present intention to keep three strings of tools in operation, these six wells should be completed within the next six weeks.

Union Oil Co. has abandoned No. 1 Murdock, an outpost in the extreme southern part of the Mount Poso field in section 34-27-28, due to its unfavorable outlook at 2,212 feet. This may change the company's decision regarding the drilling of No. 11 Tribe, in section 28-27-28. Union Oil Co. has taken over the Ausbrit Oil Co. No. 1 Premier in section 20-27-27 and work has already been undertaken to remedy a troublesome water problem. The Western Gulf Oil Co. completed No. 3 Red Ribbon in the Fruitvale field of Kern County. It flowed 387 bbls. of clean 22.3 gravity oil per day from 3,450 feet after the hole had been finished with a 6⅝-inch liner including 45 feet of perforated. The Gulf's next producer in this field should be No. 22-B in section 22-29-27 as this well is being cleaned out preparatory to making a production test. The Republic Petroleum Co. spudded in No. 2 Fleishacker in the Kern River field several days ago and is putting the finishing touches on a new rig for No. 1 Crosby which will be drilled in section 12-28-27. Rotary drilling equipment has been installed in No. 8 Strassburger and plans call for drilling operations to get under way within the next 24 hours.

Mountain View

Hogan Petroleum Co. completed another excellent producer in the Mountain View field of Kern County when No. 6 Wharton in section 32-30-29 was brought in flowing 2,688 bbls. of clean 29.9 gravity oil and 1,680,000 feet of gas per day from 6,004 feet. This new well was finished with an 8⅝-inch water string landed and cemented at 5,685 feet and a 5¾-inch liner landed on bottom. The Standard No. 1 California Land in section 13-30-28 was a somewhat smaller well upon completion at 5,035 feet after the hole had been plugged back from 5,064 feet as it was good for only 598 bbls. of 24.3 gravity oil and 1,600,000 feet of gas per day. The Shelton Oil Co. has recompleted its No. 1 Ross in the Mountain View field after effecting a squeeze job which proved successful in accomplishing the desired results. This well was returned to production pumping 190 bbls. of clean 25.9 gravity oil per day from 5,130 feet. Over in the Edison field, the General Petroleum Corp. completed No. 10-8 Speed and this new well was brought in pumping 118 bbls. of 15.7 gravity oil per day from 1,855 feet.

Kettleman Hills

Two new wells were put on production in the Kettleman North Dome field within the past several days and both of them registered satisfactory production. Kenda No. 87-20-J in section 20-21-17 was brought in flowing 1,299 bbls. of clean 34.7 gravity oil and 4,100,000 feet of gas per day following completion at 8,167 feet. This new well was finished with 6⅝-inch water string landed and cemented at 8,074 feet and a 4¾-inch liner carrying 88 feet of perforated. The Standard Oil Co. No. 2-33-J in section 33-21-17 registered an initial production of 881 bbls. of clean 38.8 gravity oil and 3,980,000 feet of gas. It was bottomed at 8,240 feet and finished with a 7-inch water string landed at 7,772 feet and a 5¾-inch liner carrying perforations at 7,782-7,865 feet and at 7,925-8,235 feet and which was cemented through perforations at 7,925-7,865 feet. Despite the relatively large number of completions in the Kettleman North Dome field in the past six weeks, both the Kettleman North Dome Association and the Standard Oil Co. still have a number of potential producers nearing completion. These operators, while not engaged in competitive drilling, are maintaining an active aggressive development program. The Standard has abandoned its No. 38-20-V in the Kettleman Middle Dome field as a duster at 8,825 feet and the crew has been switched to No. 46-19-V, which should begin making hole within the next fortnight. The Standard No. 38-20-V showed some evidence of resulting in production in the upper zone during the course of work but failed miserably when given the opportunity. It has become increasingly evident within the past several months that the Middle Dome of Kettleman Hills is in no way comparable with the North Dome and that drilling operations in the future will have to prove far more satisfactory than in the past if this field is to rank as a field of primary importance.

Capitan

The Shell Oil Co. No. 3 Orella, in the Capitan field, was brought in pumping 137 bbls. of clean 21.0 gravity oil per day from 2,789 feet after the hole had been plugged back from 2,922 feet and its No. 14 on Covarrubias lease No. 1 was completed pumping 218 bbls. of 22.3 gravity oil per day from 1,615 feet. The Shell was conducting a production test on No. 10 on Covarrubias lease No. 1 following completion of drilling at 2,620 feet.

Sespe District

In the Sespe district of Ventura County, H. A. Ivers completed No. 11 Star in section 1-4-20. It pumped 148 bbls. of clean 29.1 gravity oil per day from 1,960 feet. The Chanslor Canfield Midway Oil Co. spudded in No. 4-A Hobson in the Javon field, discovered a few months ago by the Continental Oil Co. in Ventura County and in view of this work it is quite probable that the General Petroleum and Continental Oil Co. will await the outcome of drilling before undertaking further development. In Shiells Canyon district of Ventura County operators now engaged in drilling deep tests which should reach the top of the pay within 90 days. This attempt to prove up the existence of deeper production is expected to prove successful if the showing of the Texas Co. No. 128 Shiells is any criterion. The Texas Co. ran into a complicated mechanical problem in the drilling of No. 128 Shiells and the company was not able to make a conclusive production test. The Texas geological staff thought enough of the showings found to recommend the drilling of two new tests and the company is rotating ahead in Nos. 130 and 131 on the Shiells property. Following the showings logged and revealed on the ditch by the Texas Co. No. 128 Shiells, the Petroleum Securities and Bankline Oil Co. each started a new well down to this anticipated pay and if everything runs according to schedule we may find three or four wells finished in this deep pay within a short time late in July or August. The Bankline is drilling its test in section 3-3-19 and the Petroleum Securities is drilling its No. 1 Home Ranch in section 4-3-19.

Wilmington

In the Wilmington district of Los Angeles Basin Sovereign Oil Co. No. 1 Banning in section 28-4-13 is pumping 140 bbls. of relatively clean 16.1 gravity oil per day from 3,535 feet after the hole had been plugged back from 3,663 feet but the Eyer Petroleum Co.'s project in section 20-4-13 is still showing a rather high water cut. The Republic Petroleum, which has experienced considerable success in the Kern River field and which discovered the El Segundo field of Los Angeles Basin, has taken over all but 15 acres of the Trust lease in the Rosecrans field and will drill a deep test in the immediate future. This lease will necessitate the drilling of a well to at least 7,500 feet and it would not be at all surprising if the Republic Petroleum Co. succeeded in developing a new deep zone. In order to find a new deep zone, however, the company will probably have to go down to at least 8,000 feet as the Trust property is an edge lease. The Pomaco Royalty Co. has acquired approximately 600 acres of potentially productive land in the Palos Verdes area of Los Angeles Basin and preparations are already under way to drill a test well. The company's wildcat will be located on the Burkhard property in section 1-5-14 and production is expected to be picked up at about 3,500 feet at the Miocene-Schist contact. The Pomaco Royalty Co. recently drilled the last of 18 shallow core holes from northwest to southeast across the property.

Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending May 9 totaled 314,899,000 bbls., according to the Bureau of Mines, an increase of 707,000 bbls., comprising an increase of 876,000 bbls. in domestic crude, but a decrease of 169,000 bbls. in foreign crude. Daily average crude runs to stills declined from about 2,865,000 bbls. for the week ending May 2 to 2,860,000 bbls. for the week ending May 9.

Grade of crude oil—	May 2	May 9
Pennsylvania Grade	4,261,000	4,324,000
Other Appalachian	905,000	884,000
Lima-N. E. Indiana-Michigan	1,326,000	1,341,000
Illinois-S. W. Indiana	10,468,000	10,375,000
N. Louisiana and Arkansas	10,227,000	10,214,000
West Texas and S. E. New Mexico	29,157,000	28,640,000
East Texas	20,562,000	20,957,000
Other Mid-Continent	127,819,000	128,014,000
Gulf Coast	27,444,000	28,532,000
Rocky Mountain	26,381,000	26,548,000
California	35,500,000	35,047,000
Foreign	3,292,000	3,123,000
Total reported weekly	297,342,000	297,999,000
Estimate of unreported stocks	16,850,000	16,900,000
Total stocks	314,192,000	314,899,000

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Mar. 31, 1936	Feb. 29, 1936	Mar. changes	Mar. 31, 1935
Non-gasoline-bearing, crude, residuum, gas and diesel oils	71,074,147	71,004,770	+ 69,377	64,586,972
Gasoline-bearing crude	39,683,463	40,283,260	—599,797	36,892,740
Unblended natural gasoline	1,882,921	1,962,073	— 79,152	2,896,470
Gasoline not including distributing and service stations)	12,564,458	12,296,474	+267,984	10,936,972
Naphtha distillates	1,577,324*	1,748,720*	—171,396	1,105,673*
All other stocks	9,656,271†	9,232,177†	+424,094	7,826,062†
Total	136,438,584	136,527,474	— 88,890	124,244,889
*Est. amt. of unfinished gasoline contained in item No. 5	1,249,610	1,386,923	.....	904,051
†Coke included in item No. 6	430,579	442,447	.....	549,083

Texas and Louisiana Gulf

By
F. L. SINGLETON

CALHOUN COUNTY TEST MAY BE DRILLED DEEPER INTO PAY

HOUSTON, Tex., May 25.—Humble Oil & Refining Co. No. 2 P. H. Welder, located on the Green Lake prospect, northwestern Calhoun County, has been completed for an initial production of 5 bbls. per hour of 33.2 gravity oil per hour, but due to the high gas oil ratio it may be killed and drilled deeper. It is flowing through a 7/64-inch choke with shut-in casing pressure 2,125 pounds and tubing pressure 1,390 pounds with a gas-oil ratio of 1,824 to 1.

It was drilled to a depth of 5,474 feet and was completed through perforated casing from 5,465-70 feet. This is the second field to be opened in the county, being located northwest of the Port Lavaca field in the Maria Rios Survey No. 1.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Dopslauf, located in the Satsuma area, Harris County, which last week tested 60 feet of oil on a drill stem test, is coring ahead in broken sand and shale below 6,949 feet. The drill stem test lasted 6 minutes and was made from 6,789-6,826 feet and the gas pressure built up to 450 pounds through quarter inch chokes on top and bottom of the testing tool. The showing was made in the Cockfield section topped at 6,540 feet and based on this marker with that of Hill and Hill's No. 1 Wharton, located about a mile to the southwest, No. 1 Dopslauf is approximately 100 feet structurally higher. Sufficient showings was encountered in the Wharton test which warranted setting casing, but it failed to produce and was abandoned at a depth of 7,205 feet. The Amerada test will be drilled to around this depth at which time an electrical coring will be made.

This prospect has been looked upon favorably for a number of years and has received numerous tests. It is located about 14 miles northwest of Houston and centers around the W.C. R.R. Survey. Principal acreage holders other than the operators are Humble Oil & Refining Co. and R. A. Johnson.

An Important Wildcat

One of the most attractive wildcats announced for the Gulf Coast in some time is getting under way at the Hitchcock area, southern Galveston County, where Shell Petroleum Corp. is moving in material for No. 1 Maco Stewart, located 1,800 feet south, 74 degrees 27 feet east at right angles from the west line of the J. Spillman Survey, and 1,450 feet north, 15 degrees 33 feet east from the north right of way line of the G.C.&S.F.R.R. Survey. This area has been the scene of much leasing and royalty trading during the past several months. It has been checked and rechecked with geophysical instruments by the Gulf Oil Corp., Amerada Petroleum Corp., Shell Petroleum Corp. and Humble Oil & Refining Co. The geophysical pictures indicate the structure to be a deeply seated one, and preparations have been made by Shell Petroleum Corp. to drill their test to 9,000 feet or deeper if necessary.

On the east side of the Anahuac field, Humble Oil & Refining Co. has plugged back No. 5 Broussard from a depth of 7,150 feet to 6,799 feet where it will be tested. This is the third test to be plugged back and completed in the Marginulina sand after coring salt water sand in the Frio horizon. Location is in section 59, H.&T.C. Survey. There were three completions and five locations reported. Two of the completions were made by Humble Oil & Refining Co. and the other by Sun Oil Co. All locations were made by Humble Oil & Refining Co. and were staked for Nos. 5 and 6 Gripon, No. 1 A. B. Shaver and Nos. 12 and 13 White.

In the same county, but on the Winnie prospect, northeastern part of the county, Glenn H. McCarthy abandoned his No. 1 Pitt after an electrical coring test showed nothing of importance in the Frio section at a depth of 8,006 feet. Location is in Lot 71, J. M. Duran Survey.

Two completions were recorded for the South Houston field, Harris County. On the west side of the field in the Mary Nichols Survey, Smith and McDannald No. 1 Phillips was completed at 4,785 feet and flowed 150 bbls. per day through a 12/64-inch choke with tubing pressure 430 pounds. Stanolind Oil & Gas Co. No. 1 Schwartz flowed 303 bbls. in 24 hours through a quarter-inch choke with tubing pressure 800 pounds and casing pressure 1,850 pounds.

Amelia Field

Humble Oil & Refining Co. No. 1 Pinchback, located about 1,200 feet west of the discovery well of the Amelia field, Jefferson County, was washed in from a screen setting made in oil sand from 6,760-68 feet, the total depth and made 2,160,000 feet of gas with 288 bbls. of fluid per day through a quarter-inch choke, but it was killed before it cleaned itself on account of the high-gas oil ratio and will be drilled deeper. H. J. DeArman has a rig up for No. 1 First National Bank, located 583 feet from the north and south lines and 233 feet from the east and west line of a 12.5-acre lease in the F. Binger Survey. South of the field on the Cheek prospect, Magnolia Petroleum Co. No. 1 Funchess is drilling in sandy shale below 8,290 feet. Location is in section 16, H.T.&B. Survey.

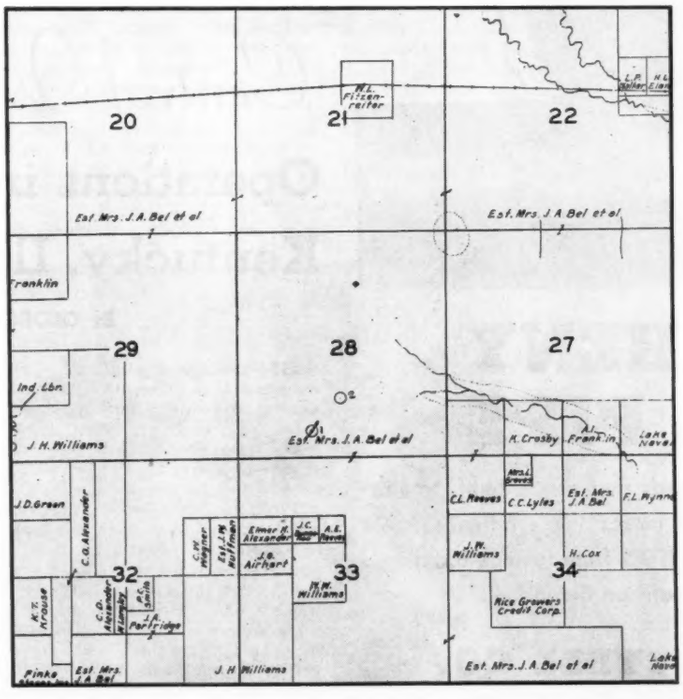
Skelly Oil Co. is preparing to complete three wells at the Van Vleck field, Matagorda County. No. 6-B Cobb is bottomed in oil sand at 7,502 feet with 7⅝-inch casing cemented at 7,502 feet, No. 1 Langham on the east side of the field is in sand at 7,505 feet and is being tested after perforations has been made in the casing from 7,460-75 feet. No. 1 Rugelsey topped oil sand at 7,470 feet and is reaming to set casing on bottom at 7,502 feet. All of the wells are located in the M. Cummings Survey.

Sun Oil Co. No. 1 Craig, located on the Hawkinsville dome, Matagorda County, was plugged back to 5,850 feet and the operators are preparing to test after perforating the casing from 5,340-60 feet and from 5,370-95 feet. Location is in the Thomas Williams Survey. On the Shepherds Mott dome, Helmerich and Payne's No. 1 Hawkins, located in the D. McCarthy is bottomed in a sidetracked hole at 3,750 feet and the hole is being reamed preparatory to running screen to test. This is the same sand which tested salt water in the hole before it was plugged back and sidetracked. In the Midfield area, northwestern part of the county, Marathon Oil Co. is moving in material for No. 1 Kountze, located 660 feet south of the north line and 660 feet west of the east line in the I.&G.N. Survey No. 11.

Atlantic Oil & Producing Co. No. 1 Hardy, located 3,600 feet north of the discovery well of the Hardin field, Liberty County, was plugged back to 7,709 feet and the 7-inch casing was perforated with 20 shots from 7,699-7,709 feet. On a drill stem test through quarter-inch chokes it showed 5,600 feet of salt water and 60 pounds of shut-in pressure and it is now shut down for orders.

South Louisiana

Interest along the Louisiana Coast was centered on the "Conroe trend." where Humble Oil & Refining Co. has announced location for a second test for the Reeves prospect, southwestern Allen Parish, which is now looked up as a possible new field due to a blow-out which occurred last week in the company's No. 1 J. A. Bell. The new test is located on the same tract. 933 feet northeast of No. 1 in section 28-6s-7w. The first test blew out when the drilling bit encountered soft formation at a depth of 7,770 feet. It caught fire and burned for two and one-half hours before it cratered, swallowing the derrick and rig. An unestimated amount of gas, mud and salt water is being blown about 5 feet above the cratered hole and it is reported that the company will drill a directional hole in an attempt to stop the flow. It is not known if the



Map of the Reeves Prospect, southwestern Allen Parish, Louisiana, showing location of Humble Oil & Refining Co. No. 1 J. A. Bel which blew out from a total depth of 7,770 feet and location of the company's No. 2 J. A. Bel to the northeast

(Courtesy of W. W. Zingery, Houston, Tex.)

well is making oil, although at the time of the fire the smoke was reported to have been black, which indicates the presence of oil. No. 1 Bell topped the Discorbis at 5,100 feet, Heterostegina at 5,160 feet, Frio at 5,817 feet and it is believed to have encountered the Cockfield section.

Shortly after the discovery of the Conroe field in Montgomery County, this tier of parishes including Beauregard, Allen, Rapides, Evangeline and Avoyelles, received an extensive leasing campaign which resulted in practically the entire area being taken under lease. The failure of several tests to find production discouraged further exploration for the time being and it was not until the past year when Amerada Petroleum Corp, opened the first Cockfield production at Cheneyville in Rapides Parish that interest was again focused on the area. The outcome of No. 2 J. A. Bell is most important as it will have much bearing on future wildcatting along this tier of parishes.

Another area which is being watched is located northeast of the Bosco field in St. Landry Parish, where Limited Oil Co. No. 1 Miller is drilling in shale below 8,282 feet. Although no geological markers are available, as it is strictly a "tight" well, it is reported to be running high. It is situated about 2½ miles northeast of the field in section 47-8s-3e.

Wildcatting in this district has increased considerably within the past few months and five such tests have reached critical depths and are holding much interest. On the Esterwood prospect, southwestern Acadia Parish, Magnolia Petroleum Co. No. 1 Homeseekers Development Co. is drilling in broken sand with no show below 8,066 feet. The deepest test drilling is Shell Petroleum Corp. No. 1 Lacassine in Jefferson Davis Parish, which is drilling ahead in sandy shale below 9,652 feet after a protection string of 7-inch casing was cemented at 9,523 feet. It is located on the Hayes prospect in section 20-11s-5w.

The other three tests are located farther east in the extreme southeastern part of the district. In St. James Parish, Shell Petroleum Corp. No. 1 Colonial Sugar is coring sandy shale below 7,074 feet. Numerous showings have been encountered, but none have shown commercial possibilities. On the Castel prospect, Terrebonne Parish, Humble Oil & Refining Co. has spudded in on No. 1 Continental Land & Fur Co., located in section 30-17s-14e. In the adjoining parish of Vermillion, Continental Oil Co. No. 1 O. G. Hebert is in shale below 7,720 feet.

Production by Pool

Daily average production of the principal pools of the Texas-Louisiana Gulf Coast for the week ending May 23 was as follows:

TEXAS COAST

Field—	Bbls.
Anahuac	7,737
Barbers Hill	17,875
Conroe	46,890
Hastings	7,036
Humble	3,630
Manvel	9,034
Mykawa	3,337
Thompson	10,878
Tomball	7,835
Greta	16,137
Plymouth	9,052
Saxet	9,433
Saxet Heights	6,312
Miscellaneous	100,651
Total	255,837

LOUISIANA COAST

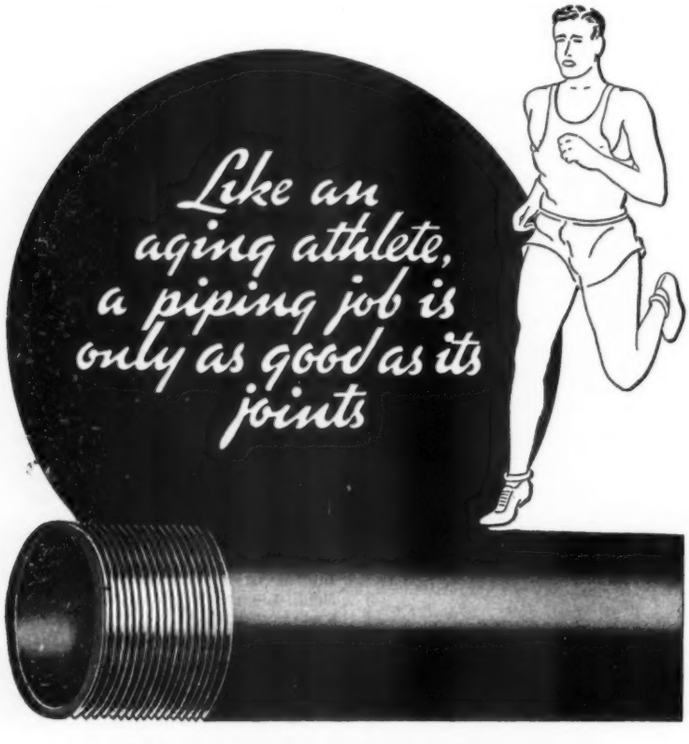
Bosco	13,737
Caillou Island	12,640
Cameron Meadows	5,334
East Hackberry	7,835
Gillis	13,437
Iowa	17,684
Lake Barre	10,637
Leesville	14,879
Tepetate	4,732
Roanoke	5,937
Sulphur	5,059
Miscellaneous	33,817
Total	145,728
Total Gulf Coast	401,565

Tepetate Field

In the Tepetate field, Acadia Parish, Continental Oil Co. has completed No. 1 Johnson in section 30-7s-2w, for an initial production of 425 bbls. in 17 hours through a one-quarter inch choke with tubing pressure 1,100 pounds and casing pressure 1,150 pounds. No. 1 Hugh Breckenridge in section 29 is bottomed in oil sand at 8,306 feet with 5-inch casing cemented on bottom preparatory to testing through perforated casing. On the extreme west side of the field, General Crude Oil Co. No. 1 Vincent is coring in shale below 9,144 feet.

Herton Oil Co. has completed its fifth producer at Jeanerette in St. Mary Parish. It is No. 2 Banta, which was completed in the Miocene sand from 6,630-55 feet, the total depth for an initial production of 672 bbls. per day through a three-eighths inch choke with tubing pressure 1,500 pounds and casing pressure 1,440 pounds. Gravity of the oil tested 36.5. No. 3 Banta, located 960 feet west of No. 1 Raones, is coring in shale below 7,165 feet and will be completed in the 7,400-foot sand. No. 1 Carter, an outpost test which has missed both production horizons, is coring in shale below 9,150 feet. It will be drilled to the Oligocene sand. Location is in section 38-13s-9e. No. 4 Banta is a new location situated 187 feet east of the west line of tract, midway between Nos. 1 and 2 in section 40-13s-9e.

Two tests in the St. Martinsville field, St. Martin Parish, which were attempting to open new producing horizons, are plugging back to make a second test after testing salt water. Tide Water Oil Co. No. 2 Smedes, in section 57-11s-6e, perforated casing with 10 shots from 6,752-56 feet and tested 3 joints of oil and 12 joints of salt water and is now plugged back to 5,500 feet, which is the discovery horizon. To the south in section 57, Continental Oil Co. No. 1 fee, perforated casing from 7,710-16 feet and showed salt water and the hole will be plugged back to a higher sand which showed possibilities on an electrical coring test.



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Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, May 25. — Few completions were reported from the Central West fields during the past week, due a great extent to the heavy rains, but with some more sunshine and less rain, the work will go on like the old times.

The Lima field, according to reports, will be given tests in advance of old-time operations, as there is plenty of territory in the old drilling areas. In Wood County which was one of the large producing areas, there are six wells under way, while in Allen County, three wells are reported drilling, and one completed, that being Pease & Pease, trustee No. 1 on the C. A. Sands farm, section 14, Bath Township, reported good for an initial of 20 bbls. H. F. Kelley & Co. abandoned No. 1 on the Mary M. Mosier farm, section 25, Shawnee Township.

In Darke County, E. C. Downey is drilling No. 1 Ruby Rhodes, section 20, Mississenawa Township. Case Oil & Gas Co. is drilling No. 21 W. C. Disher, section 20, same township, and J. G. F. Huffman is drilling No. 4 on the J. A. Cox farm, section 16, same township.

In the Tiffin field, in Seneca County, M. R. McPheron & Co. are drilling No. 5 Frank G. Fox, section 11, Hopewell township, and J. H. Murphy & Sons are drilling No. 1 on the J. G. Werling farm, section 16, same township.

In Wyandot County, O. Weigal is drilling No. 1 Irene Cupp, section 16, Tymochtee Township. Wood & Co. are drilling No. 1 Edward Orton, section 22, Pitt Township.

In Ashland County, Falkner & Philips are drilling No. 8 Guy Z.

(Continued on Page 78)

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Rowan Drilling Co. is drilling ahead on No. 1 Dopslauf, a wildcat located in the Satsuma area, Harris County, after testing 60 feet of oil and 450 pounds of pressure on a six-minute drill stem test from 6,789-6,826 feet. It is being drilled for the Amerada Petroleum Corp. and Stanolind Oil & Gas Co. and on last reports was below 6,949 feet. In Orange County, for Tide Water Oil Co., No. 1 E. N. Brown has been spudded.

Cron & Gracey have moved in a rig to the West Columbia field to drill No. 13 Abrams for the Texas Co. In the meantime six other rigs are located as follows: One at Manvel for Texas Co., two at South Houston for Stanolind Oil & Gas Co., one at Barbers Hill for Sinclair Prairie Oil Co. and two at Placedo for Barnsdall Oil Co.

Edwards Drilling Co. has abandoned Texas Canadian Oil Co. No. 1 Bland at the Orange field at 7,550 feet and is drilling ahead on two other interesting tests located on the Grigsby prospect in Hardin County for David B. McDaniel and at the south extension area of the Dickinson field in Galveston County which is being dug for the Kenben Oil Co.

H. J. Dearman has entered the Amelia field, Jefferson County, and is preparing to spud No. 1 First National Bank which will be drilled for himself. It is located in the F. Binger Survey.

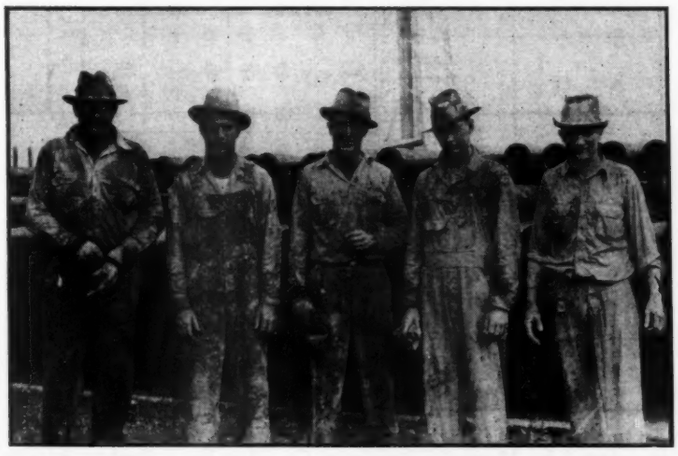
Nicklos Drilling Co. is nearing the pay on two wells at the Tepetate field in Acadia Parish for the Continental Oil Co. and is drilling below 4,860 feet on No. 2 Cormier at Port Barre in St. Landry Parish for the Pan American Production Co. The Continental wells are No. 2-A Welch and No. 3 Homeseekers, and both are below 7,300 feet.

Smith and McDannald have completed another well for themselves at the South Houston field in Harris County and have moved the rig over for No. 1 Merridith. In the same field contract was received from Stanolind Oil & Gas Co. for No. 1 Butz and it is being rigged up. No. 1 Cochran at Louise has been completed for the Pure Oil Co. and the rig is being moved in for No. 5 McIntyre. In the meantime six other rigs are located as follows: One at Hastings for Stanolind Oil & Gas Co., one in Wharton County for themselves, two at Long Lake for Tide Water Oil Co. and Texas Co., one in Zavalla County for Bay Oil Corp. and one at the Jennings field for the Shell Petroleum Corp.

Ben (Bud) Coyle has completed his fifth producer at the Jeanerette field in St. Mary Parish for the Herton Oil Co. and has moved the rig to a new location. The completed well, No. 2 Banta, was completed in oil sand from 6,630-55 feet for an initial production of 672 bbls. per day through a three-eighths inch choke. No. 4 Banta is being rigged up and No. 1 Carter, an outpost well located 1,282 feet east of production, is drilling below 9,100 feet. No. 3 Banta is coring for the sand below 7,200 feet.

Al Buchanan, of San Antonio, completed new producers in the Loma Novia and Piedra Lumbre fields of Duval County for the Humble Oil & Refining Co. during the past week. The Piedra Lumbre well was brought in for a gasser at 2,129 feet after failing to find production in the regular sand of the field. This opens a new horizon. In the Seven Sisters field in the same county rigs are drilling for Humble, Shell Petroleum Corp. and Blanco Oil Co., and another well was brought in for Shell. Other activities in the same county include rigs drilling for the Stanolind Oil & Gas Co. in the Labbe field and for the Shell Petroleum Corp. in Loma Vista. In San Patricio County two new wells were begun for the Plymouth Oil Co. and for Benedum & Trees No. 2 Welder is drilling in sand and shale at 6,126 feet. This test has had showing in two sands but has not yet made a commercial producer in either.

(Continued on Page 68)



Noble Drilling Co. day tour on location at the Hastings field in Brazoria County for Stanolind Oil and Gas Co. Standing, left to right: P. A. Wiggins, Clark Grissom, R. L. Forker, driller, W. M. Wise and Walter W. Keener

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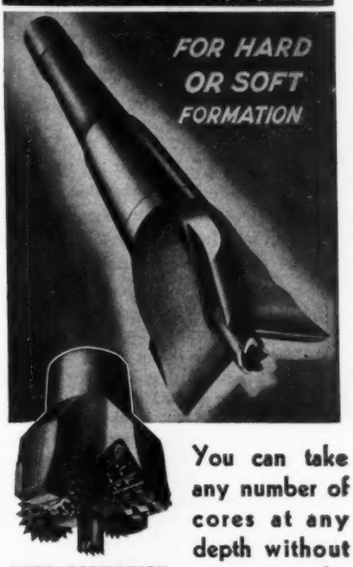

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Southwest Texas District

DEEP SAND IN SAXET FIELD ATTRACTIVE TO OPERATORS

By
GEORGE WEBER

SAN ANTONIO, Tex., May 25.—Indications of an extension to the Clara Driscoll field in Nueces County, and scattered developments of lesser importance, resulted from drilling activity in Southwest Texas during the past week. Increasing interest in the new deep sand in the Saxet field in Nueces County was manifest in operations of that district. Several old tests are being reentered to deepen to the 5,800-foot level in search of the new production. Immediate development of some of the newly opened fields of this district, particularly Bentonville and Alta Verde is seen in several cases. Northeast extensions were completed in the Samfordyce field of Hidalgo County, and the new deeper sand of that field is showing for oil production. In Duval County, another sand was opened in the Piedra Lumbre field, and a southwestern extension to the Seven Sisters field is anticipated.

The O. W. Killam No. 1 Ellick, located in section 109 of the George Paul Subdivision about 1 mile southwest of Santa Clara Oil Co. No. 1 Driscoll, shows indications of becoming a producer and possible extension to the, as yet, undeveloped field. Sand was cored in the test at 3,885-98 feet and a test made gas. Saturation was cored at 3,892-98 feet, however, and casing has been set. The field was opened in November, 1935, by Santa Clara Oil Co. when No. 1 Driscoll came in for 72 bbls. per hour from sand at 3,807-16 feet. An offset failed to make a producer, and drilling in the area lapsed until the present test was started. Revived interest in the area brought about by showings in this test may hasten development of the field, especially if the No. 1 Ellick makes a producing well.

Saxet Field

In the Saxet field, another oil well was added to the deep horizon of the field, and a well was in process of completion. Southern Minerals Corp. No. 1 Mastin was brought in making 220 bbls. per day on a five-thirty-seconds inch choke from sand cored at 5,803-24 feet. Conroe Drilling Co. No. 1 Frank Bliss is running tubing for completion in the same sand cored at 5,814½-31 feet. In a drill stem test this well showed more than 1,000 feet of oil. Several tests of the sand are under way, some of them workovers of old tests. Holliday No. 1 Griffith, a former gasser which was deepened to 5,844 feet and completed at 5,816-44 feet, opened up the new sand. Houston Oil Co. has gone back into No. 2 McGregor in Survey 311 to deepen; the former Richardson & Thomas No. 1 Page Brothers is being reworked by Coastland Oil Co. and Keystone Royalty Co., and W. W. Chapman has derrick up on the old Texas Coast Oil Co. No. 1 Morgan-Clark; all three are to test the 5,800-foot sand.

Other activity in the field still centers around Clarkwood area, where extensive drilling is developing the 4,400-foot sand. Two new producers were completed in this sand during the week.

Activity in the Saxet Heights or Corpus Christi field on the edge of that city in Nueces County has dropped off slightly and nothing of importance resulted from the week's activity. Four completions and one recompletion were made, and the northwest extension, Hiram Reed No. 1 Quinn has not yet been completed but is swabbing.

San Patricio County

Proven field completions in San Patricio County were restricted to the Taft field where Esnes Oil Co. No. 3 Britton, south offset to the discovery well, was brought in for 8 bbls. per hour from a total depth of 4,019 feet. Plymouth field activity is steady, with operations on the south edge continuing to develop the field in that direction.

Bentonville, the new field recently opened by Texon & Lucey No. 1 Coopwood is getting unusually rapid attention. Six tests are either under way or moving into the general area of the discovery. Four of these are Stanolind Oil & Gas Co. tests. That company holds the bulk of the acreage around the new well. The most advanced of these tests. Texon & Lucey No. 1 Dodd, apparently missed the sand found in the discovery well and are coring below 5,419 feet at the latest report. The No. 1 Coopwood is producing from sand at 5,380-90 feet. All of the tests now drilling are located in Jim Wells County. La Jita Corp. is moving in on No. 1 Pope, a location in section 20 north of Bentonville, and adjacent to the King field, which is just across the line in Nueces County. That company abandoned No. 2 King at 6,003 feet in the past week.

In Brooks County, the Alta Verde field also recently opened is being explored by two active tests with two additional ones moving in. In this field, Pedernal Oil Co. No. 1 Singer is standing at 1,003 feet waiting to run a Schlumberger test having apparently missed the shallow sand of the field.

Duval County

In Duval County, the Hoffman field, another comparatively recent production area is the scene of eight drilling and projected tests. One, the Masten No. 1 Ruiz in section 128 between the Hoffman and Loma Novia field is running high and is reported showing oil saturation at 2,889-96 feet. Two completions were made in this field during the week.

Busy Loma Novia

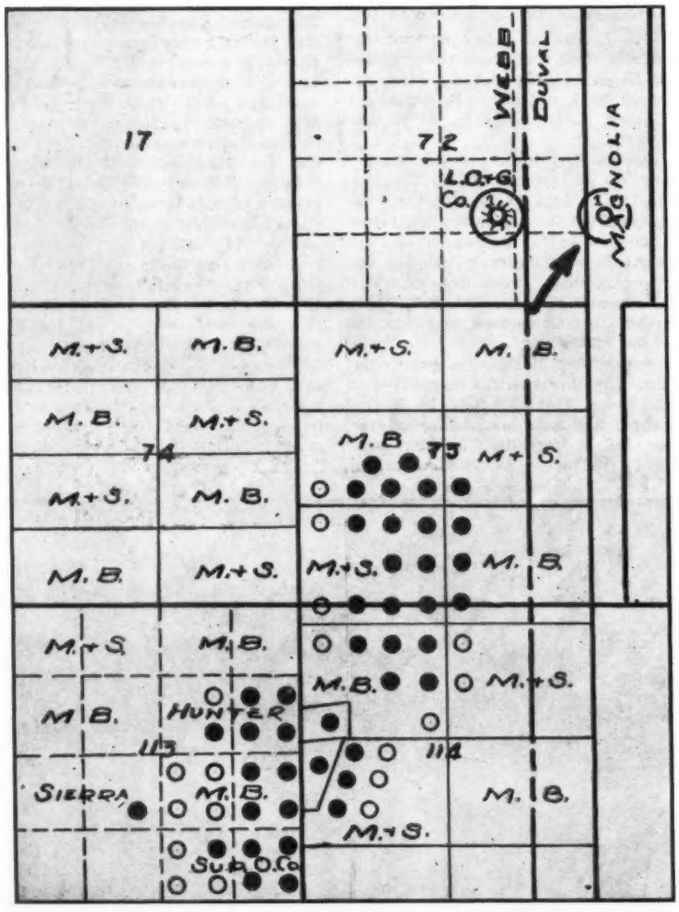
Thirteen completions during the week made Loma Novia the ranking field in Southwest Texas from that standpoint. Initial productions ranged from the allowable figure for some wells brought in on the pump to 49 bbls. per hour gauged on Shell Petroleum Corp. No. 32 Hubbard in Survey 77. Drilling in this field, while the most concentrated in this section, consists mainly of routine development of proven acreage.

Seven Sisters rated second with eight completions during the week. An important westward extension is indicated for this field. Atlantic Oil Production Co. and Darby Petroleum Corp. No. 1-G Welder in Survey 102 tested oil in the Government Wells sand. The test is located south of Santa Clara Oil Co. west lease, and if completed for a producer will constitute an important extension to the field. All of the eight new wells brought in during the week in this field are producing from the Government Wells sands.

In Piedra Lumbre, Humble Oil & Refining Co. opened a new deeper sand to gas production. The No. 2-B Duval County Ranch Co. was completed for a gasser at total depth of 2,129 feet. Texas Co. completed a well in the regular sand of the field for 15 bbls. per hour.

In Webb County, the Lopez field is to get an important test. Magnolia Petroleum Co. is moving in on the No. 1 Peal, located northeast of the field and 1,980 feet due east of Luling Oil & Gas Co. recent test which was completed for a gasser. The Luling test ran the highest of any well in the field so far, indicating continuance of the structure to the northeast. The Magnolia test will be watched with great interest as an

(Continued on Page 73)



An important test for the Lopez field of eastern Webb County is being started by Magnolia Petroleum Co. It is No. 1 Peal in Survey 383, due east of Luling Oil & Gas Co. No. 1 Peal, completed as a gasser, after running higher than any well in the field, indicating a northeastward trend. The Magnolia test will reveal much regarding the probable extent of the field

Kansas Developments

By
DAL DALRYMPLE

McPHERSON COUNTY'S NEW POOL; EXTEND GRABER FIELD

McPherson County claimed major oil interest in Kansas at the week-end, with one well showing as a pool opener and another extending the Graber field. Empire Oil & Refining Co. No. 1 Cunningham, SE cor. section 26-18-1w, wildcat 4 miles north and 2 miles east of Canton, may open a new pool. It topped Mississippi lime at 2,835 feet and drilled in to 2,839 feet, total depth. Oil rose 500 feet in the hole and was still rising, but gas pressure was low. Gas showed signs of increasing, however. Testing of the well was delayed for storage. The well is north of a geological ridge which had been considered the north limit of production in the area. South of the ridge are the Canton, Decker and Anderson pools.

The Graber field of McPherson County was extended a half mile to the north by Marathon Oil Co. No. 1 Decker, SW SE SE section 20-21-1w, which apparently is a bigger producer than any in the pool. It had not been tested, but production was variously estimated, the more conservative placing the rate of flow at 25 bbls. an hour, natural flow. Others though it would make a 3,000-bbl. producer when completed. Hunton lime was topped at 3,284 feet, total depth 3,299 feet. Tubing was being set, preparatory to testing. Derby Oil Co. already has staked location for a test southwest of the No. 1 Decker. Continental Oil Co., which discovered the pool and has big holdings in the area, was reported to have staked four tests offsetting the new producer.

Estimated Production

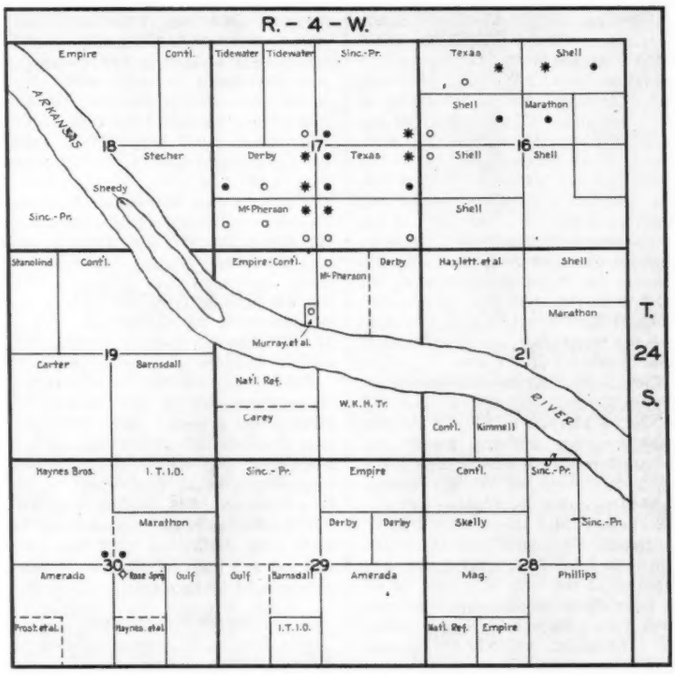
Estimated daily average production in Kansas for the week ending May 23 and for the preceding week is as follows:

	Barrels	
	May 23	May 16
Oxford City	6,600	7,500
Burrton	13,100	13,400
Ritz-Canton	6,575	6,700
Hollow-Nikkel	4,025	4,175
Voshell	3,000	3,175
Ellsworth County:		
Lorraine-So. Lorraine	7,725	7,240
Other pools	1,358	2,049
Rice-Barton Counties:		
Chase	9,427	9,781
Raymond	3,715	4,017
Silica	12,611	12,657
Keesling	2,763	2,327
Miscellaneous Rice	4,141	4,919
Miscellaneous Barton	2,287	2,447
Russell County:		
Fairport	2,924	2,722
Gorham	4,085	4,523
Russell	3,834	3,815
Sullivan	3,091	2,990
Other pools	6,558	7,793
Sedgwick County:		
Valley Center	1,372	1,381
Greenwich	1,446	1,472
Robbins	1,533	1,560
Eastborough	830	849
Other pools	419	437
Ellis County	1,190	1,850
Kingman County	541	611
Stafford County	2,435	2,152
Greenwood County	9,250	9,500
Butler County	18,100	18,010
Other fields	22,180	20,448
Total Kansas	157,125	160,500

A wildcat in far western Kansas was showing as a gas producer. It was the Curran & Murphy No. 1 Hamlin, SW SW NE section 31-24-34w, about 15 miles southwest of Garden City in Finney County. Gas was estimated at 1,000,000 feet in sand topped at 2,500 feet. It was being drilled deeper, looking for greater production. It is 33 miles south of oil production in the Shallow Water pool of Scott County and 5 miles northwest of the one producer in the Brown gas field.

In the Shallow Water pool, the third oil well was nearing completion. Atlantic Oil Producing Co. No. 1-B Mark, C NW SW section 14-20-33w, in Scott County, swabbed 153 bbls. of oil on preliminary test from 4,649 feet in Mississippi lime. Afterward, it swabbed 50 bbls. of oil in one hour and five minutes.

The wildcatters continue to run rampant throughout western Kansas, locations for 11 wildcat tests having been staked the past week. Five of the new tests were in Ellis County, now one of the hot spots in Kansas. Decatur, Ellsworth, Haskell, McPherson, Ness and Russell Counties had one new wildcat each.



Drilling operations in the Burrton field of Reno County, Kansas, are being extended southwestward toward the Haven and Yoder areas

(Mid-Continent Map Co., Wichita, Kans.)

Rice County

Gulf Oil Corp. completed two good producers in the Silica field of Rice County. The No. 5 Stoltz, SE NE NW section 32-19-10w, made potential of 1,645 bbls. of oil and was completed at 3,289 feet, total depth. Siliceous lime was topped at 3,275 feet. No. 6 Stoltz, SW SW NW section 32-19-10w, also topped Siliceous lime at 3,275 feet and was completed at 3,292 feet, total depth. It made potential of 1,376 bbls. The third completion in the Silica area was the C. B. Davis and others No. 7 Dueser, C W half NW SW section 31-19-10w. It topped Siliceous lime at 3,267 feet, was completed at total depth of 3,284 feet, and made potential of 1,220 bbls. of oil.

National Refining Co. No. 7 Sherman, NE NE SW section 16-19-9w, in the Chase district, made potential of 636 bbls. of oil after acid treatment and was completed at 3,208 feet, total depth. Top of Siliceous lime was 3,173 feet. It pumped 270 bbls. of oil before acidizing. Mid-Continent Petroleum Corp. No. 7 Hartle, NE SE NW section 15-20-9w, in the Keesling area, topped Kansas City lime at 2,895 feet; Siliceous lime, 3,220 feet, and was completed at 3,229 feet. It was acidized with 1,000 gallons and made potential of 919 bbls. It was reacidized with 1,000 gallons and made new potential of 1,824 bbls. Sinclair Prairie Oil Co. No. 1 Cross, SW NW NE section 15-20-9w, was completed at 3,239 feet, total depth, after encountering Siliceous lime at 3,226 feet. It was acidized with 3,000 gallons and made potential of 389 bbls. of oil.

Empire Oil & Refining Co. No. 2 Burns, NW SW SW section 15-20-10w, in the Raymond pool, produced 245 bbls. of oil and 88 bbls. of water on potential test and was completed. Production was from Siliceous lime topped at 3,380 feet; total depth, 3,381 feet. In the Geneseo district, Continental Oil Co. and others No. 1 G. F. Gibson, SE SE SW section 24-18-8w, made potential of 1,434 bbls. after acidizing with 4,000 gallons and was completed at 3,173 feet, total depth. Top of Siliceous lime was 3,161 feet. Derby Oil Co. No. 1 De Foe, NE NW SE section 18-8w, had a hole full of water in Siliceous lime at 3,340-42 feet, total depth, and was dry and abandoned. Simpson formation was topped at 3,301 feet.

C. B. Teague and others No. 1 Hauschild, NE NE NW section 15-21-7w, topped Kansas City lime at 2,878 feet and had a hole full of water at 3,000-15 feet. Operators drilled ahead, topped Chat at 3,369 feet, made potential of 624 bbls. of oil and was completed at 3,372 feet, total depth. Skelly Oil Co. No. 4 Graham, SE NE SE section 16-20-10w, made potential of 1,721 bbls. of oil, cutting 8 per cent water, in 20 hours after acid treatment. It topped Siliceous lime at 3,370 feet and was completed at 3,372 feet, total depth. Allison & Fitzwilliam No. 1 Blake "A," NE NW NW section 9-18-10w, topped Anhydrite at 500 feet; Siliceous, 3,257 feet; weathered Granite, 3,515 feet; Granite, 3,530-3,605 feet, total depth, and was completed as a water disposal well.

New Operations

The following new work in Rice County was reported: Continental Oil Co. and Empire Oil & Refining Co. No. 3 Nickel, SE SW SW section 13-18-8w, location; Continental Oil Co. and others No. 3 J. R. Lansing, SE SW SE section 25-18-8w, building rotary rig; same operators' No. 4 J. R. Lansing, NW NE SE section 25-18-8w, cellar; Stanolind Oil & Gas Co. No. 6 Mitchell, NW NW SW section 32-19-10w, rotary rig; Roy Ramsey No. 5 Hilton, SE SW SW section 6-20-9w, building rig.

Bradley Oil Co. No. 5 Wendell, NW NE NE section 32-19-10w, topped Siliceous lime at 3,340 feet, drilled to 3,346 feet and oil rose 2,000 feet in the hole. It had not been tested. Hutchison Oil Co. No. 5 Wendell, NW SW NE section 32-19-10w, pumped 2,000 bbls. of oil in 23 hours but was not completed. Top of Siliceous lime was 3,280 feet; total depth, 3,329 feet. Gulf Oil Corp. No. 5 Coffman, SW cor. section 5-20-9w, topped Siliceous lime at 3,232 feet, drilled to 3,259 feet and pumped 1,135 bbls. of oil. Gulf Oil Corp. No. 4 Kees-

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ling, NE SW SW section 10-20-9w, swabbed 93 bbls. of oil in eight hours. It topped Siliceous lime at 3,214 feet; total depth, 3,254 feet. Darby Petroleum Co. No. 1 Johnson, SE SE SW section 10-21-7w, flowed 360 bbls. of oil in six hours, was shut in for 18 hours and then flowed 153 bbls. in one hour. Top of Chat was 3,367 feet.

Shell Petroleum Corp. No. 5 McFarland, NW NE NW section 7-20-9w, rotary rig; Sinclair Prairie Oil Co. No. 6 Sharp, SE NE NE section 7-20-9w, set 13-inch casing at 166 feet, waiting; Gulf Oil Corp. No. 1 Cross, NW SW NE section 15-20-9w, cellar; same operator's No. 3 E. Malone, SW NW NE section 18-20-9w, set 10-inch casing at 172 feet, waiting; Darby Petroleum Co. No. 2 Johnson, C E half E half SW section 10-21-7w, moving in material; same operator's No. 3 Johnson, C S half S half SW section 10-21-7w, moving in material.

Barton County

Four producers were completed in the Barton County sector of the Silica field. Texas Co. No. 2 Schmidt, NW NE NW section 36-19-11w, made potential of 1,755 bbls. of oil after topping Siliceous lime at 3,289 feet and drilling to 3,294 feet, total depth. Continental Oil Co. No. 10 Risse, NE SW SE section 36-19-11w, topped Siliceous lime at 3,275 feet and was completed at 3,287 feet, total depth. It made potential of 1,638 bbls. in the first 24 hours after acidizing with 4,000 gallons. Same operator's No. 11 Risse, NW SE SE section 36-19-11w, was acidized with 4,000 gallons and made potential of 1,886 bbls. of oil. Top of Siliceous lime was 3,270 feet; total depth, 3,281 feet. Magnolia Petroleum Co. No. 4 Meda Steckel, SE SE NW section 1-20-11w, topped Siliceous at 3,285 feet and was bottomed at 3,305 feet. After acid treatment it made potential of 384 bbls.

Two new tests were reported in Barton County. Sinclair Prairie Oil Co. No. 3 Isern, SW SE SW section 25-19-11w, was building rotary rig. Indian Territory Illuminating Oil Co. No. 1 Burchart, SE SE NW section 14-20-11w, was a location.

Stanolind Oil & Gas Co. No. 1 E. W. Eberhardt, SW cor. section 13-19-11w, drilled to 3,356 feet, total depth, and swabbed at the rate of 9 bbls. of oil an hour. Top of Siliceous lime was 3,306 feet. Buchanan & Alexander No. 1 Langfeld, NE NE SW section 14-20-11w, wildcat, made potential of 488 bbls. of oil but was not completed. Kansas City lime was topped at 3,022 feet; total depth, 3,299 feet.

Reno County

The biggest producer to be completed in Kansas during the past week was the Shell Petroleum Corp. No. 1 Whipple, C W half W half NW section 14-26-9w, in the Lerado pool of southwestern Reno County. It topped Kansas City lime at 3,330 feet; Viola lime, the producing formation, at 4,126 feet, and was bottomed at 4,141 feet. It was acidized with 3,000 gallons and flowed 625 bbls. of oil in eight hours, the flow increasing to more than 100 bbls. per hour in the last three hours. It made potential of 2,348 bbls. The well was reacidized with 6,000 gallons, flowed 1,569 bbls. in six hours and made new potential of 5,949 bbls.

In the Burrton field, the Sinclair Prairie Oil Co. No. 1 Baker, C SW NE section 10-24-4w, made potential of 619 bbls. of oil and was completed at 3,365 feet, total depth. Chat, the producing formation, was topped at 3,295 feet. It was acidized with 1,000 gallons and flowed 408 bbls. of oil in 20 hours. It was reacidized with 3,000 gallons and flowed 505 bbls. in 21 hours. Shell Petroleum Corp. No. 1 Flory, C SW SE section 9-24-4w, topped Chat at 3,301 feet and was completed at 3,393 feet, total depth. It pumped and flowed 358 bbls. of oil and 360 bbls. of water in 24 hours.

Empire Oil & Refining Co. No. 1 Miller "B," NW NE NW section 34-24-5w, in the Yoder area, was acidized with 1,000 gallons and pumped 50 bbls. of oil and 50 bbls. of water in 24 hours. Chat was topped at 3,394 feet; total depth 3,496 feet, completed. Magnolia Petroleum Co. No. 2 Mayme Harris, SW SE NW section 9-26-4w, in the Hilger area of southeastern Reno County, made potential of 686 bbls. of oil and was completed at 4,075 feet, total depth. Top of Chat was 3,625 feet; Viola lime, the producing horizon, 4,072 feet; Misener sand, 4,037 feet. Empire Oil & Refining Co. No. 1 Holtje, NW NW NE section 9-26-4w, was dry and abandoned at 4,120 feet, total depth. Before abandoning, it pumped 14 bbls. of oil and 800 bbls. of water in 24 hours. Chat was topped at 3,667 feet; Misener, 4,086 feet; Viola, 4,115 feet. Cheney and others No. 1 Moore, wildcat, NE cor. section 14-26-8w, was dry and abandoned at 4,425 feet, total depth. Formation tops follow: Topeka, 2,750 feet; Kansas City lime, 3,308 feet; Chat, 3,945 feet; Viola, 4,295 feet; Simpson, 4,301 feet; Siliceous lime, 4,400 feet.

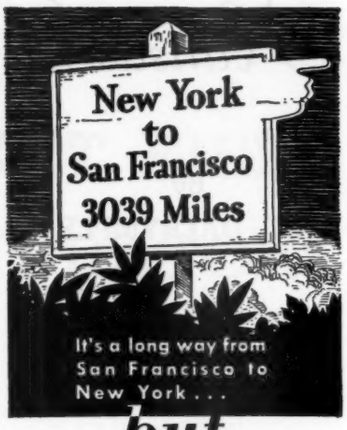
The following new work in Reno County was reported: Marathon Oil Co. No. 2 Priddle, SW SW SE section 17-24-4w, rigging up rotary; same operator's No. 3 Priddle, NE SE SE section 17-24-4w, rigging up rotary; Shell Petroleum Corp. No. 1 M. Whipple, C E half E half NE section 15-26-9w, rigging up rotary.

Tide Water Oil Co. No. 1 Burrton State Bank, SE SE NW section 17-24-4w, was acidized with 3,000 gallons and pumped 27 bbls. of oil per hour. Chat was topped at 3,293 feet; total depth, 3,375 feet. Shell Petroleum Corp. No. 1 S. Collins, NW NW SW section 16-24-4w, topped Chat at 3,310 feet, drilled to 3,391 feet and pumped 106 bbls. of oil and 20 bbls. of water in 16 hours.

Russell County

Only two wells were completed in Russell County the past week, a low number for that active county. Gulf Oil Corp. No. 2 Pierce, NE NW SE section 2-14-15w, was completed at 3,311 feet, total depth, in top of Gorham sand, and made potential of 948 bbls. of oil. Anhydrite was topped at 915 feet; Oswald lime, 3,060 feet. Joe Aylward No. 1 Rusch, SE SW NW section 19-12-15w, was dry and abandoned at 3,415 feet, total depth, in Conglomerate, topped at 3,388 feet. Dodge formation was topped at 3,060 feet. Oswald lime, 3,090 feet.

New work in Russell County follows: Empire Oil & Refining Co. No. 2 Miller "C," SE cor. section 31-14-13w, location; Gulf Oil Corp. No. 1 Ehrlich, SW SW NW section 1-14-15w, old well deepened from 3,066 to 3,093 feet, had 300 feet of oil the hole; Billings No. 3 Witt, NE SW SW section 3-14-15w, rig; Stanolind Oil & Gas Co. No. 36 C. A. Mermis, SE SE NE section 5-14-15w, location; Empire Oil & Refining Co. No. 1 Schultz, NE cor. section 16-15-13w, moving in material; Coralena Oil Co. No. 2 Boomhower, NE NW NW section 32-15-13w, moving in material; Armer and



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others No. 1 Maier, NE NW NE section 20-15-14w, location.

Hartman & Blair No. 3 Sullivan, NW NE SE section 2-14-15w, had Gorham sand at 3,316 feet, drilled 5 feet in sand and pumped 100 bbls. of oil in seven hours. It made potential of 250 bbls. of oil and swabbed 25 bbls. of oil an hour for 12 hours, but had not been completed.

Rush County

No wells were completed in Rush County, but a wildcat was showing as a new pool opener. National Refining Co. No. 1 Werth, NW NE NE section 7-16-18w, wildcat, was bottomed at 3,572 feet and production was estimated at 50 bbls. of oil a day. Oswald lime was topped at 3,328 feet. The outcome still was doubtful for another Rush County wildcat, the Rose Spring Drilling Co. and others No. 1 Jacobs, SW SE NW section 8-16-17w. It had a hole full of water but was drilling ahead at 3,581 feet. La Motte sand was topped at 3,570 feet. Gas production was estimated at 5,000,000 feet at 3,529-35 feet.

Stafford County

Stanolind Oil & Gas Co. and Atlantic Oil Producing Co. No. 1 Shotton, SW cor. section 27-22-13w, wildcat in Stafford County, was dry and abandoned at 3,878 feet, total depth. It had a hole full of water at 3,862 feet. Formation tops: Anhydrite, 735 feet; Kansas City lime, 3,430 feet; Viola, 3,726 feet; Siliceous, 3,846 feet.

Ellis County

Lario Oil & Gas Co. and associates completed their new Ellis County pool opener, the No. 1 Walter, SE NE SW section 2-12-18w, at 3,165 feet, total depth. It topped Topeka lime at 3,060 feet. It pumped 112 bbls. of oil and 20 bbls. of water in 24 hours. After acidizing with 1,000 gallons, it made potential of 1,159 bbls. of oil, cutting 1 per cent water and 6 per cent basic sediment. Top of Anhydrite was 1,314 feet.

The eight new tests starting in Ellis County included five wildcats. National Refining Co. No. 1 Bemis, SE SE SW section 16-11-17w, was a location; Uscan Oil Co. No. 2 Bemis, SE NE NE section 21-11-17w, ponds; J. E. Trigg and others No. 1 Armbrister, SE SE SW section 6-11-19w, wildcat, moving in material; Jones & Shelbourne No. 1 Gunther, SE SE SW section 9-11-19w, wildcat, rigging up; Vickers Petroleum Co. No. 1 Kraus, SW SW NW section 22-14-19w, wildcat, rotary rig; Twin Drilling Co. and others No. 1 Schmidt, SW SW NE section 22-15-17w, wildcat, rig; Gulf Oil Corp. No. 2 Swires, NE SE SW section 8-15-18w, moving in material; Bradley Oil Co. and others No. 1 Penney-Wann, SE cor. section 13-15-20w, wildcat, set 20-inch casing at 19 feet and waiting on cement at 48 feet.

McPherson County

In the Graber area of McPherson County, Continental Oil Co. and associates completed No. 2 A. H. Graber, C E half W half SE section 29-21-1w at 3,314 feet, total depth. It swabbed 125 bbls. in two hours and was acidized, making potential of 808 bbls. Production was from Hunton lime, topped at 3,300 feet. Top of Chat was 2,928 feet.

McPherson Oil & Gas Co. No. 4 Anderson, NE SE NE section 31-18-2w made potential of 220 bbls. of oil after acidizing with 3,000 gallons and was completed. Kansas City lime was topped at 2,314 feet; total depth, 2,334 feet. Sunray Oil Co. and others No. 4 Anderson, NW SW SW section 29-18-2w, in the McPherson pool, was bottomed at 2,345 feet, acidized and made potential of 23 bbls. of oil on two-day average. Top of Kansas City lime was 2,306 feet.

New work in McPherson County follows: Hawkins and others No. 1 Ritikofer, NE NE SE section 2-20-1w, wildcat, cellar; Continental Oil Co. and others No. 2 C. C. Graber, NW NE NW section 32-21-1w, building rig; same operators' No. 3 C. C. Graber, NE SE NW section 32-21-1w, cellar; same operators' No. 2 Wenger, NW SW NE section 32-21-1w, building rotary rig; McKnabb and others No. 2 Neufeldt, SE SE NW section 21-21-3w, an old well, rigging up to deepen.

Ellsworth County

Two good producers were completed in the Lorraine area of Ellsworth County by Carter Oil Co. and associates. No. 2 Groth, C S half S half SW section 23-17-9w, was acidized and made potential of 1,368 bbls. of oil. It pumped 136 bbls. in 12 hours before acidizing. Siliceous lime was topped at 3,181 feet; total depth, 3,189 feet. No. 4 Ogden, C S half S half SW section 26-17-9w, topped Siliceous lime at 3,178 feet and was completed at 3,182 feet, total depth. It pumped 285 bbls. of oil in 15 hours, was acidized and made 24-hour potential of 1,251 bbls.

Only one new test was reported in Ellsworth County. York State Oil Co. No. 1 Koestle, NW NW SE section 12-17-9w, wildcat, was a location.

Greenwood County

Two failures were reported in Greenwood County. McGinnis No. 1 Dater, NW NW SW section 11-24-8, wildcat, had Mississippi lime at 2,570-2,600 feet, total depth, and was dry and abandoned. Marylyn Oil Co. No. 5 Wilkinson, NW SE NW section 7-25-9, in the Wilkerson area, was dry and abandoned at 2,269 feet, total depth. It topped sand at 2,236 feet and had a showing of oil at 2,236-45 feet.

Butler County

Vickers Petroleum Co. No. 2 McCraner "C," SW NE NW section 1-25-3, in the Potwin area of Butler County, made potential of 109 bbls. of oil on two-day average and was completed. Mississippi lime was topped at 2,690 feet; total depth, 2,720 feet. It was acidized with 1,000 gallons.

National Refining Co. No. 1 Sutter "A," SE SE NW section 1-28-6, had Wilcox sand at 3,173-84½ feet, total depth, plugged back to 3,183 feet and was completed. After a shot with 40 quarts, it made potential of 442 bbls. of oil on two-day average.

Only one new operation in Butler County was reported. National Refining Co. No. 2 Sutter "A," NW SW NE section 1-28-6, was a cellar.

Cowley County

Watchorn Oil Co. No. 4 Gregory, SE cor. section 6-35-3, in Cowley County, set 7-inch casing at 3,443 feet and was drilling below 3,497 feet. It formerly was reported as the Alma Petroleum Co. No. 4 Gregory.

Sumner County

T. M. Deal Oil & Gas Co. No. 2 Peter, NW NW SE section 23-32-2,

(Continued on Page 73)

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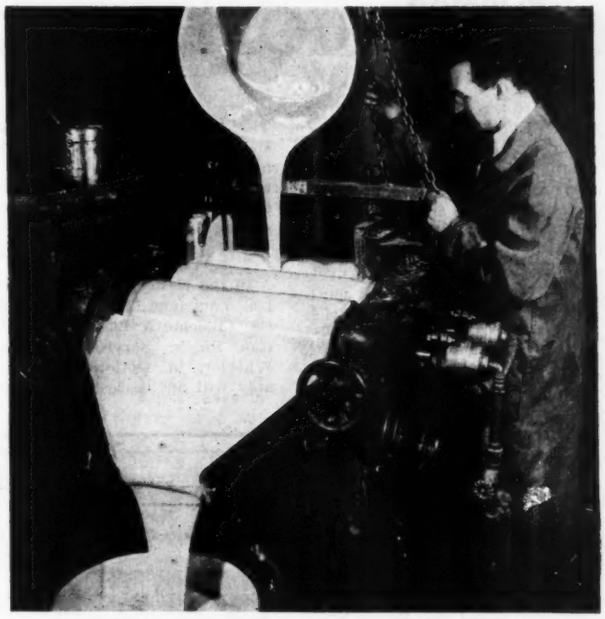

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SYNTHETIC RESINS

North Louisiana, Arkansas

TRINITY SAND WET GAS WELL OPENED IN WEBSTER PARISH

By H. STANLEY NORMAN

SHREVEPORT, La., May 26.—Proving of high pressure, wet gas production from another Trinity section structure in North Louisiana in Webster Parish has spurred the wildcat exploration and lease purchase program to record proportions.

The new Webster Parish discovery made by J. P. Evans, 3 miles southeast of Sibley in his No. 1 Tom Crichton, climaxed a six shallow test program drilled by the discoverer or through his efforts in the territory.

The wet gas production, gauged through small flow line connection on the casing at 26,700,000 feet per day is believed coming from 35 feet of sand corresponding with the Gloyd horizon in the Rodessa pool. Higher in the Glenrose section of the Trinity series and thought by operators to correspond with the Hill sand at Rodessa, a smaller amount of gas showed on production test. Technicians who tested the Evans No. 1 Crichton for 26,700,000 feet of gas per day expressed belief that the well is capable of double that volume under more favorable conditions, with hydraulic nipple and larger flow line.

The Evans No. 1 Crichton, 1,778 feet north and 192 west of the SE corner of section 35-18-9, is now bottomed at 5,589 feet. On earlier test, which is believed to have been from the Hill zone, operators had from 1,000,000- to 5,000,000-foot showing at total depth of 5,532 feet.

Evidence of structure was first disclosed in the territory by William M. Barrett, Inc., geophysicists, of Shreveport, through magnetic research. Drilling of the six shallow tests in search of Blossom sand production gave further evidence of subsurface closure and later the area was shot by Arkansas-Louisiana Gas Co.'s crews.

Acreage Owners

Ohio Oil Co., United Gas Public Service Co., Amerada Petroleum Corp., Stanolind Oil & Gas Co., Texas Co., Phillips Petroleum Co. and Arkansas-Louisiana Gas Co. are among the companies holding spreads in the Evans block. Six short-term leases, due to expire in December unless developed, surround the discovery wet gasser, presaging early exploration of full producing possibilities.

J. P. Evans, Shreveport independent operator, retains approximately 4,000 acres in scattered leases and has oil rights under 1,700 additional acres in which Arkansas-Louisiana has the gas rights. In addition to gas rights on 1,700 acres within the block, Arkansas-Louisiana owns full seven-eighths interest in 5,000 acres joining the Evans block on the northeast and east.

Standard Oil Co. of Louisiana has a block of 6,000 acres joining the Evans holdings on the southwest, and Tide Water Oil Co.'s highly regarded shooting block is approximately 6 miles north and a little west. Location is expected to be announced shortly by Tide Water, probably in section 10 or 11-18-10.

Western Caddo Test

In the western part of Caddo Parish, Louisiana, Pyramid Oil & Gas Co. (Belchic & Laskey) and United Gas Public Service Co. No. 1-A Wheeler, in section 16-18-16, probably will not be tested until the latter part of this week. Operators resumed work Monday drilling plug after setting and cementing 7-inch casing at 4,804 feet. After drilling plug and washing to bottom, operators will cement back from 5,210 to 4,850 feet for a production test of Coquina lime showing productive possibilities on Schlumberger chart from 4,826 to 4,849 feet.

Purchases of scattered mineral interests in vicinity of the Pyramid and United wildcat test continued all last week with prices unchanged at $100 per acre down.

Scattered buying also continued in the Cross Lake district of Caddo Parish southeast of the Pyramid and United No. 1-A Wheeler where Gulf Refining Co. has assembled a large block. Leasing in this vicinity has been extended by independents into the western limits of Shreveport.

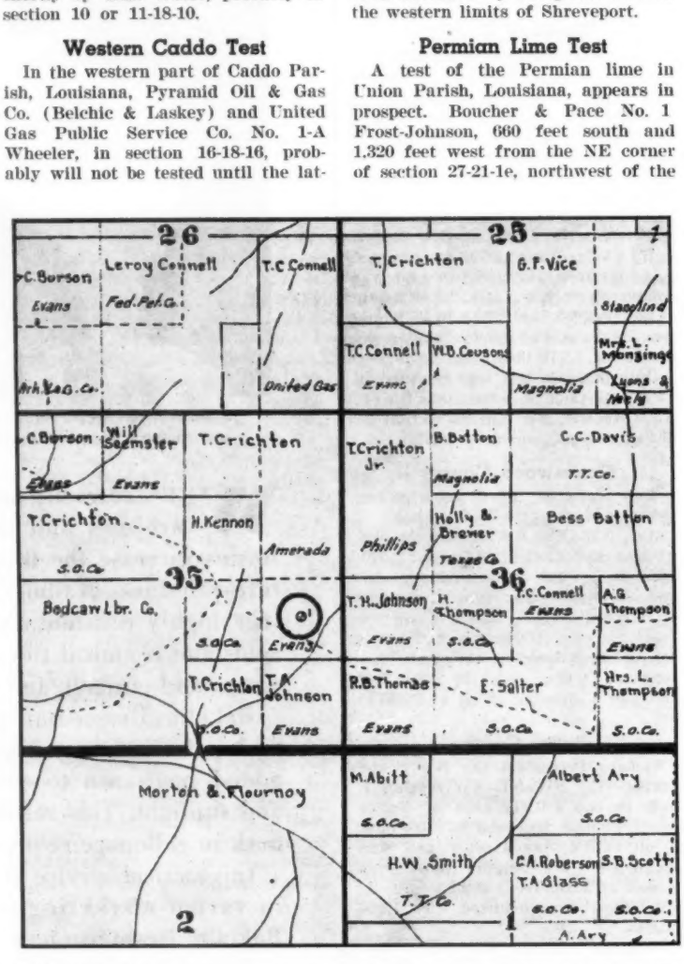
Permian Lime Test

A test of the Permian lime in Union Parish, Louisiana, appears in prospect. Boucher & Pace No. 1 Frost-Johnson, 660 feet south and 1,320 feet west from the NE corner of section 27-21-1e, northwest of the Monroe gas pool and on acreage originally held by Gulf Refining Co., topped the Travis Peak at 3,880 feet and was last reported fishing at 4,076 feet. Travis Peak is closely associated with basement sands of the Trinity series, and Permian will be the next possible producing horizon. Location of the wildcat test on the popular trend southeast of Phillips Petroleum Co.'s Permian lime discovery producer on the northeast flank of Smackover pool in Arkansas probably will encourage operators to carry the Boucher & Pace hole to an equivalent horizon.

Six miles northeast of Lide & Greer's discovery Trinity gasser in Bienville Parish, Herman L. Brown No. 1 S. Gardner, in section 10-17-4w, in the southern part of Lincoln Parish, is coring in brown and gray shale and sandy shale below 5,962 feet.

Southern Arkansas continued popular last week among companies and independents. Phillips Petroleum Co. was reported to have added approximately 200,000 acres to its vast holdings out of Crossett Lumber Co.'s holdings in the western part of Ashley County while Gulf, H. L. Hunt, Inc., and Sun Oil Co. also purchased additional acreage.

One of the most active trading centers at present in Southern Arkansas is in Township 18s-24, approximately 9 miles north of the Joe Modisette No. 1 Red River Lumber Co.



Webster Parish territory surrounding the J. P. Evans No. 1 T. Crichton estate, in section 35-18-9, Trinity discovery well producing high pressure, wet gas

(Courtesy Globe Map Co., Shreveport, La.)

Production

Estimated daily gross production all companies week ending May 22:

NORTH LOUISIANA

	Bbls.
Bellevue	460
Caddo light	4,095
Caddo heavy	2,485
Converse	1,110
Cotton Valley	400
DeSoto and Red River	1,340
Elm Grove	455
Haynesville	3,420
Holly	145
Homer	2,640
Pleasant Hill	160
Rodessa	68,250
Sarepta-Carterville	415
Urania	2,885
Zwolle	1,220
Total	89,480

SOUTH ARKANSAS

Champagnolle	3,210
El Dorado	2,100
Lisbon	290
Miller County	1,060
Nevada	870
Smackover light	2,155
Smackover heavy	17,780
Stephens	560
Urbana	1,950
Total	29,975

Texas side Rodessa field, 2,350 bbls. daily

Rush to Cass County

Early development of the Cass County, Texas, portion of the Rodessa pool to the same density prevailing in Caddo Parish, Louisiana, is presaged by actions of lease holders last week.

Permits for drilling 30 tests on the Cass County side of the bi-state pool have been approved by the Texas Railroad Commission. However, several of the permits are concentrated on small tracts and the owners are following a practice which has become almost universal in Texas of obtaining permits for several more locations than are likely to be drilled.

However, operations were definitely started on four new locations in the vicinity of American Liberty Oil Co.'s recently completed No. 1 Marcus Rambo which extended productive limits of the Rodessa pool 4½

(Continued on Page 78)

East and East Central Texas

By
L. E. BREDBERG

LUCEY EXTENDS TALCO WITH LARGEST WELL IN THE FIELD

DALLAS, Tex., May 23.—The Talco field, in northwest Titus and northeast Franklin County, centering at present in the little town of Talco in Titus County, now extends nearly 4½ miles from east to west along a fault plane which is cut by the tests which drill into the Paluxy sand, member of the Trinity, deeper pay formation, from which production is coming in the field

Lucey Petroleum Co. No. 1 Crawford, in the Orlando James Survey, about 1,500 feet northwest of the nearest producer, both falling in Franklin County, came in for the best well yet completed in the field. At a total depth of 4,300 feet, it made 62 bbls. of oil per hour through 2½-inch tubing. Elevation is 371 feet. The Georgetown lime was logged in this well from 3,407-35 feet, and casing was set last week at 4,034 feet. The Paluxy was topped at 4,139 feet. The company is now rigging up to drill its second test on this lease, 150 feet from the south and west lines of the 25 acres. The company has permits for at least 10 more tests in the pool, all of which will be drilled within the next few months, and as the company deems necessary. Byrd & Frost and the C. & G. Oil Co. of Dallas, are also interested with Lucey in these leases, and the latter company is contemplating laying a gathering system to serve the leases, same to connect with a loading rack on the Paris & Mount Pleasant Railway near the townsite.

Dean Brothers and Adkisson of Fort Worth, who own 20 small tracts, including townsite lots and leases east and west of the townsite, have made a deal with the Red Iron Drilling Co. of Gladewater, to drill six wells on as many tracts in the pool, work to start at once. The first test, known as Red Iron Drilling Co. No. 1 Cornelius, 150 feet from the north line and in the center of the east and west lines of a three-acre tract in the M. V. Delgado Survey, now has a derrick up on location, and a derrick is to be moved in at once in the center of a one-acre tract of the Lavada Primitive Baptist Church, which is a northwest offset to the above mentioned new completion of Lucey Petroleum Co.

The Hollingsworth Drilling Co. is rigging up on the A. O. Brown tract, in the center of Lot 1, Block 41, Delgado Survey. The Nivla Oil Co. has staked location 150 feet from the north and east lines of a 15.76-acre tract in the J. Solman Survey, both in the Talco pool, Titus County.

E. Constantin, Jr., of Dallas, has staked location on the W. D. Cato tract in the M. V. Delgado Survey. Another location is that of Jack Blakely of Longview on the Mrs. D. Warner town lot, Block 12. Owensby Drilling Co. of Dallas has permit to drill on the J. F. Barton tract in the Delgado Survey, Titus County. George W. Lyles of Lockhart, Tex., has permits for six wells on the J. K. Milligan lands in the I. P. Stern Survey.

Major companies hold the great bulk of acreage in the Talco area, owning the larger tracts, but independents have leases on the majority of the townsite lots and own other scattered tracts in the pool, all of which will probably be drilled in the near future, and which will call for offsets and consequently a large amount of immediate drilling, as noted from the locations mentioned above. The Railroad Commission has called a hearing on the pool for June 2 at Austin at which meeting spacing, allowables and other pertinent matters will be discussed.

The next well to be completed in the field is that of the Magnolia Petroleum Co. No. 1 Carr, in the M. V. Delgado Survey, and a west offset to the discovery well. It is now drilling in oil sand at 4,200 feet, topping it at 4,195 feet, according to reports. Elevation is 371 feet.

The Nemo Oil Co. No. 1 Talco School District, in the I. P. Stern Survey, just southeast of the town of Talco, Titus County, logged Austin chalk at 2,451-81 feet, Georgetown lime at 3,440 feet and Woodbine sand at 3,024-54 feet. The fault was reported to have been cut at 3,041 feet, and this test is slated to be completed within the next two weeks. It is now drilling below 3,625 feet.

Wildcatting

Four locations were staked in as many counties in the East Texas district, for wildcat tests. One of these is to be a 6,000-foot test on a block along the fault line in Kaufman County. Lester & Duffield, of Dallas, are to drill the well, which is to be located on the D. C. Baron lands in the J. D. Taylor Survey near the Hunt-Kaufman County line. F. W. Dye and Clark & Cowden Drilling Corp. have the drilling contract.

Five Woodbine sand tests were drilled in the vicinity of this new location about 12 years ago, all proving dry, one test drilled several miles to the northeast by the Gulf Oil Corp., having gone to the Paluxy sand. The location is situated on a subsurface structure, the owners holding a large block of acreage surrounding it. Derrick has been built.

Another Interesting Location

T. J. Wood, who drilled the Rusk discovery well in Cherokee County a couple of years ago, has staked a location on the J. E. and J. O. Huggins farm in the Levi Jordan Survey, nearly 2 miles southwest of the small Rusk pool and about 1 mile northwest of Gholson and others No. 1 Southern Lumber Co., which topped the Woodbine sand at 5,084 feet and showed 900 feet of oil with 650 feet of salt water on drill stem test of the sand. However, it was later abandoned at a total depth of 5,099 feet. So far only three oil wells have been completed in the Rusk pool and dry holes have discouraged much drilling in the vicinity of the discovery. The presence of salt water in the discovery and other producers in the pool also held back developments.

Hopkins County

Dilworth Hager and others of Dallas propose the drilling of a wildcat test in the A. O. Wetmore Survey, in Hopkins County, about 18 miles southwest of Talco, but as yet location has not been decided. Acreage owners in the area are expected to donate acreage or financial help in the drilling of the test, which may be carried to the Paluxy sand.

Another shallow test for Angelina County is being drilled by G. E. Ginter and others on lands of the Cope heirs in the Jose Moron Survey about 3 miles east of Dibol. The test is now shut down at 80 feet waiting for casing. The same operators are drilling 2 miles west of Homer, in the E. Evans Survey, same county.

A wildcat for Franklin County will be drilled by the Atex Oil Co. of Athens if plans now in formation succeed. The test, to go to 6,000 feet, in search of Trinity sand production, would be drilled on a block of some 6,000 acres, centering in the Humphries Survey, and near the town of Winfield. Ike LaRue and Homer Parson head the company.

A deep test may also be drilled near Sugar Hill in Titus County. A group of Corsicana operators are said to be interested in this wildcat, which would be located in the eastern part of the county.

Old Test to Be Deepened

A test abandoned last year at 900 feet in Red River County, will be carried to 4,500 feet in quest of Trinity sand production if proposed plans materialize. Joe Dinger of Fort Worth drilled the original hole 1 mile south of Detroit in the western part of the county, but a group of Oklahoma and Texas men are reported to have signed contract to carry it on down. Dinger drilled No. 2 Norris, in the same area, to 1,800 feet, striking considerable gas at about 1,200 feet.

Rusk Deep Test

Pure Oil Co. No. 1 Faulkner, east of Mount Enterprise, in southern Rusk County, a deep test in quest of Trinity sand production, is now drilling at 5,750 feet, showing no oil or

Showing the nearly 5-mile east and west development of the Talco pool, in Titus and Franklin Counties, northeast Texas. Since the above map was made the field has been extended northwesterly

(From map by Zingery Mapping Co., Fort Worth, Tex.)

gas. It is located in the William Elliott Survey. Elevation is 563 feet.

Lytle No. 1 J. L. Thompson, located in the P. Varella Survey, west of Mexia in Limestone County, which created considerable excitement recently when erroneous reports came out that it was flowing oil from the Trinity sand, was plugged back with 18 sacks of cement, approximately 20 feet from total depth of 6,064 feet, and was again tested. It still produced salt water. Chances of it making a deep producer seem slim. It is now reported making between 2,000,000 and 3,000,000 feet of gas through a quarter-inch choke. A second deep test is expected to be drilled in the area by Mr. Lytle, whose home is in Sioux City, Iowa.

Wildcat Abandonments

One of the more important wildcat abandonments in the East Texas district was Rogers Stewart and others test on lands of the Trinity Farms Co. in the R. M. Williamson Survey, Freestone County. It was given up as dry at 4,039 feet. Elevation is 252 feet. It is across the river from the Cayuga field in northwestern Anderson County.

Operators are again active in the shallow producing area around Corsicana in Navarro County, where several oil wells and a number of dry holes have been completed in this area within the past few months. Two pumpers, each making 10 bbls. per day, were completed in the past week in the James Smith Survey, and one in the John Harris Survey, both falling in the Powell field. Total depth of one was 1,210 feet and the other 1,147 feet.

East Texas Field

There were 62 locations staked in the East Texas field this week and 49 wells were completed, two proving dry when they overstepped the producing zone in Upshur County. One was completed on gas lift, 10 were pumpers and one was completed swabbing. There are now over 20,560 producing wells in the field, 58 being listed on the "dead" report, according to Railroad Commission records.

The large purchase mentioned in this column last week between Trippett & Meadows of Shreveport, purchasers, and Roeser-Pendleton, Inc., vendors, has been modified. The Atlantic Oil Producing Co. has taken over the properties from the latter, the former having an option and being involved in the sale to Atlantic. Consideration was reported at $400,000 in cash and the remainder out of one-half of the oil to be produced. There were some 475 acres and 65 gross wells involved in the deal, Roeser & Pendleton, Inc., having a net interest of 29.75 wells on the leases. There are 30 more locations to be drilled on the properties, the daily allowable of the wells being around 1,355 bbls., the properties falling mostly in Gregg and Upshur Counties. J. K. Wadley, independent operator, is associated with the Atlantic in the purchase.

There are now around 245 tests being drilled or preparing to drill in the East Texas field. The density of the field is rated at one well to every 6.25 acres. Major producers have one well to each 7.24 acres and independents one well to each 5.03 acres.

The allowable for the field was cut back on May 20 when the new factor 2.6 per cent of the hourly well potential went into effect. This increased the number of marginal wells by 1,348, the marginal potential of those wells totaling 998,157 bbls. per day. The field allowable for that day was 435,355 bbls.

EAST TEXAS COMPLETIONS

Completions in the East Texas field and in the East Central Texas area, with top of sand and total depth records and initial production, were as follows:

Anderson County

Tide Water & Seaboard Oil Corp. No. 4 Campbell, total depth 4,041 feet, 153 bbls. in 24 hours.

Cherokee County

Merry Brothers & Perini No. 2 Kelly, 3,671-3,672 feet, 40 bbls. per hour.

Franklin County

Lucey Petroleum Co. No. 1 Crawford, total depth 4,300 feet, 620 bbls. in 10 hours through 2½-inch tubing.

Freestone County

Roger Stewart No. 1 Trinity Farms, total depth 4,039 feet, dry and abandoned, elevation 252 feet.

Van Zandt County

Cauble & Thompson No. 3 McKinzie, dry and abandoned 1,237 feet, elevation 431 feet.

Navarro County

Coffield and Guthrie No. 2 Lovett, total depth 1,210 feet, 10 bbls. day on pump. Thompson & Sitton No. 4 Pugh, total depth 1,147 feet, 10 bbls. day on pump.

Gregg County

Amerada Petroleum Co. No. 10 Tooke, 3,502-3,535 feet, 71 bbls. per hour. Arkansas Fuel Oil Co. No. 34 Burnside, 3,481-3,506 feet, 16 bbls. in 15 minutes; No. 9 Snoddy, 3,551-3,576 feet, 20 bbls. in 15 minutes. Joe Long No. 13-A Owens, 3,629-3,713 feet, 75 bbls. per hour. Selby Oil & Gas Co. No. 26-B Snavely, 3,555-3,570 feet, 49 bbls. in 30 minutes. Stanolind Oil & Gas Co. No. 6-B Jones, 3,595-3,676 feet, 16 bbls. in 15 minutes. Bradley No. 1-A McNeely, 3,716-3,717 feet, 90 bbls. in six hours on pump. Burma Oil Co. No. 1 Pentecost, 3,466-3,513 feet, 40 bbls. in eight hours on swab. Humble Oil & Refining Co. No. 19 Knowles, 3,589-3,623 feet, 40 bbls. per hour.

Kinso Oil Co. No. 7 Wells, 3,656-3,657 feet, 27 bbls. per hour. Rajo Oil Corp. No. 13 McComic, 3,707-3,708 feet, 18 bbls. per hour. Schulman No. 1 Richards, 3,472-3,530 feet, 20 bbls. in 24 hours on pump. Sinclair Prairie Oil Co. No. 24-B King, 3,444-3,469 feet, 20 bbls. in 15 minutes. Sun Oil Co. No. 22 Morton, 3,494-3,518 feet, 60 bbls. per hour. Texas Co. No. 18 Walker, 3,573-3,578 feet, 40 bbls. per hour. Tide Water Oil Co. No. 31 Bivens, 3,631-3,638 feet, 6 bbls. in 10 minutes.

Rusk County

American-Liberty Oil Co. No. 11-B Christian, 3,614-3,662 feet, 9 bbls. per hour on pump. Humble Oil & Refining Co. No. 90-B Laird, 3,541-3,633 feet, 65 bbls. per hour; No. 33-B Sexton, 3,660-3,758 feet, 35 bbls. per hour. Magnolia Petroleum Co. No. 2 Mayfield, 3,610-3,635 feet, 20 bbls. in two hours on pump. Gilcrease Oil Co. No. 8 Bradford, 3,592-3,670 feet, 40 bbls. per hour. Herrin No. 1-B Frederick, 3,561-3,572 feet, 30 bbls. per day on pump. Hunt Production Co. No. 18 Young, 3,645-3,667 feet, 29 bbls. in 18 minutes. Marathon Oil Co. No. 28 Burton, 3,647-3,668 feet, 64 bbls. per hour; No. 29 Burton, 3,655-3,676 feet, 52 bbls. per hour; No. 33 Moore, 3,600-3,639 feet, 15 bbls. in 15 minutes. Royal Petroleum Corp. No. 6 Ector, 3,494-3,563 feet, 20 bbls. in six hours on pump. Shell Petroleum Corp. No. 18-A Brooks, 3,660-3,715 feet, 30 bbls. in 30 minutes. Sinclair Prairie Oil Co. No. 70 Kinney, 3,616-3,624 feet, 23 bbls. in 15 minutes. West Texas Oil & Royalty Co. No. 4 Talley, 3,554-3,660 feet, 30 bbls. per hour on pump.

Smith County

Centex Oil Corp. No. 2 Pace, 3,834-3,835 feet, 20 bbls. in 30 minutes. Drury & Meeks No. 2-B Cole, 3,843-3,884 feet, 90 bbls. per hour. Johnson & Owens No. 3 Wright, 3,674-3,676 feet, 20 bbls. in 20 minutes. Sun Oil Co. No. 6 Burns, 3,749-3,750 feet, 20 bbls. in 75 minutes. Texas-Canadian Oil Co. No. 3 Beale, 3,720-3,721 feet, 10 bbls. per hour on pump. Weaver-Crim Oil Co. No. 9 Stone, 3,772-3,777 feet, 40 bbls. per hour.

Upshur County

Johnson No. 5 Williams, 3,700-3,707 feet, 20 bbls. per hour. Phillips No. 1 Vernon, dry and abandoned 3,761 feet. Reynolds No. 6 Miller, 3,746-3,747 feet, 20 bbls. per hour. Rutledge & Boller No. 5 Todd, 3,637-3,641 feet, 20 bbls. per hour. Starr No. 2-A fee, 3,637-3,641 feet, 20 bbls. per hour. Sterling Refining Co. No. 2 Miller, 3,787-3,794 feet, 20 bbls. per hour on pump. Sun Oil Co. No. 12 O'Byrne, 3,704-3,705 feet, 20 bbls. per hour; No. 1 Tullas, 3,797 feet, total depth 3,823 feet, plugged back to 3,801 feet, dry and abandoned. Wadley No. 5 Gillespie, 3,705-3,714 feet, 25 bbls. per hour. Werby and Refugio No. 6 Reed, 3,683-3,684 feet, 20 bbls. per hour on gas lift. Woods No. 3 Mackey, 3,717-3,719 feet, 22 bbls. per hour; No. 6 Mackey, 3,735-3,736 feet, 10 bbls. in 30 minutes.

Completions and Operations in New York-Pennsylvania Gas Field

By R. C. CONINE

COUDERSPORT, Pa., May 25.—There were two completions in the New York-Pennsylvania gas fields during the week ending May 22. Belmont Quadrangle Development Co. got salt water at 4,966 feet and abandoned the test on the J. O'Hara farm, Willing Township, Allegany County. Property Shares got 200,000 feet of gas in the shallow test on the Charles Hooper farm, Rome Township, Oneida County. Total depth was 737 feet. Initial rock pressure was 50 pounds.

Pennsylvania Operations

Potter Development Co. staked a new location on the D. Spetz farm, Pittsfield Township, Warren County. Godfrey L. Cabot was building a rig on the Theodore Cobb farm, Genesee Township, Potter County. New York State Natural Gas Co. was drilling at 4,305 feet on the D. Rapan farm, same township. Sylvania Corp. was drilling at 2,250 feet on the George McCutcheon farm, Harrison Township, same county. New York State was drilling at 2,925 feet on the F. Whitney farm, Bingham Township, same county. Sylvania was idle at its location on the J. Steadman farm, Genesee Township, same county. Godfrey L. Cabot was idle at the location on the Guy Thompson farm, same township. Potter Development Co. was building a rig on the Crawford estate property, Keating Township, same county. H. C. Drilling Co. was drilling at 250 feet on the Lesser & Louner farm, Kinzua Township, Warren County. Cowanesque Gas Co. was drilling at 2,530 feet on the George Stebbins farm, Clymer Township, Tioga County. New York State was drilling at 710 feet on the Otto Burnside farm, same township. Godfrey L. Cabot was drilling at 300 feet on the J. L. Lattimer farm, same township.

New York Operations

Cunningham Natural Gas Co. was drilling at 4,590 feet on the J. O'Hara farm, Willing Township, Allegany County. Schrack and others were drilling at 4,240 feet on the Markey estate property, same township. Godfrey L. Cabot was building a rig on the Leo Harder farm, Alma Township, same county. Wittmer Oil & Gas Co. was drilling at 3,070 feet on the Raymond Cline farm, Amity Township, same county. Utica Natural Gas Co. was shut down at 875 feet on the William Grimm farm, Western Township, Oneida County. Natural Gas Producers Co. was shut down at 560 feet on the Eddy farm, Rome Township, same county. Belmont Quadrangle was drilling at 2,980 feet on the J. A. Brown farm, Leon Township, Cattaraugus County. Farriman and others were drilling at 1,463 feet on the Cash Willis farm, Howard Township, Steuben County. Carpenter and others were drilling at 1,995 feet on the C. Matteon farm, Avoca Township, same county. Ross and others were shut down at 436 feet on the G. Wright farm, Portland Township, Chautauqua County. Southwestern Development Co. was drilling at 120 feet on the E. G. Smith farm, Hanover Township, same county.

Drilling Contractors

(Continued from Page 61)

Allen & Morris completed two producers in Loma Novia for the Humble Oil & Refining Co. Both were located on the company's "B" lease in Survey 72, where the contractors keep two rigs active.

Trinity Drillers, Inc. of San Antonio are completing producers for the Superior Oil Co. in the Lopez field of Webb County, and for the S. R. C. Oil Co. in Escobas, Zapata County. In addition, rigs are drilling for Continental Oil Co. in Driscoll, and a rig is moving in for a test in Hoffman for W. C. McBride. Both are located in Duval County. Two rigs are active in the Gulf Coast area, drilling for Texas Co. in Wharton County and for Rowan & Hope in Victoria County.

Michigan Field Report

By
PAUL A. ELLIOTT

NINE MICHIGAN GAS WELLS PRODUCE 275 MILLION FEET

MUSKEGON, Mich., May 25.—Every existing Michigan natural gas record was broken, not once but two or three times, during the past week in Tri-Townships field of Mecosta and Montcalm Counties where nine producers aggregating 275,000,000 feet daily open flow capacity were completed.

New records include: First, largest new initial for any week in the state's 11-year oil and gas history; second, largest new production for any single day; third, largest single gas well, a record twice broken; fourth, largest average production per well; fifth, largest number of new gassers in a single day; sixth, largest number of new gassers in one week; seventh, largest open flow capacity in a single field; eighth, largest new production for any single operating concern; ninth, largest aggregate open flow for any township, and tenth, thickest pay sands in Michigan.

If there are other uncomputed records, they too were broken in the Central Michigan field already serving Bay City, Saginaw, Lansing and many smaller intervening communities and soon to be supplying Grand Rapids, second largest city in the state.

Because of the unprecedented gas production, extension of Tri-Townships field both in area and thickness of the Michigan Stray sand, Grand Rapids Gas Light Co. is hoping for approval of 100 instead of 50 per cent natural gas service through a 50-mile pipe line now being laid from the field at a public hearing before the Michigan Public Utilities Commission in Lansing on Thursday, May 28.

A single well record of only a week's standing was broken Friday when Hyatt and Norton No. 1 Sutherland, C SE NE section 5-12n-7w, Belvidere Township, Montcalm County, blew in with an open flow capacity of 54,000,000 feet a day. This topped by 500,000 feet the same operators' previous record set in the No. 1 Fouts, C SW NW section 3, same township, when it made 53,500,000 feet daily a week before in the same pay. The Fouts well was drilled 29 feet into the shallow pay sands.

The day before completion of the state's largest gasser, Charles Bell No. 2 Burley Bailey, C SW SE section 30-13n-7w, Millbrook Township, Mecosta County set a new record for this section of Tri-Township's field making 42,000,000 feet a day.

Terrific pressure prevented drillers making more than 19 feet into the pay sands leading engineers to predict the well might have made as high as 70,000,000 feet a day from a larger hole. It was impossible to keep the tools in the hole for another 10 feet to a depth comparing with other nearby producers.

Commercial Oil & Gas Co. No. 1 Elmer Peterson, NE SE section 5, Belvidere Township, Thursday added 38,000,000 feet daily in a well across the road from the record Sutherland producer. Bryan & Martin No. 1 Charles Miller, C NW SE section 34, Millbrook Township, made 1,500,000 feet Thursday to complete the day's record of 93,000,000 feet of new production.

Three other large gassers also were completed in the same field, one in Belvidere, another in Millbrook Township and a third in Hinton Township, Mecosta County, with half a dozen more poised for the final drilling into the same pay.

Refiners Petroleum Corp. No. 2 Clark R. and Ina Miller, C NE SW section 34, Millbrook, had a rated open flow of 30,000,000 feet a day, while Frank E. Davis No. 1 Joseph Bloomfield and others, C NE NW section 5, Belvidere, added 28,000,000 feet daily.

Leslie T. Barber No. 1 George Flemming, C SW SW section 27, Millbrook, missed the shallow gas though a direct offset to a producing well.

Columbia Oil & Gas Co. No. 2 R. Freeman, C SE SW section 24-13n-8w, Hinton Township, made 25,000,000 feet daily.

As if the big producers were not enough for the glory of Tri-Townships field, D. F. Jones extended the field about three-fourths of a mile southwest by making a commercial producer of the No. 1 Charles L. Cosselman, C NW NE section 8, Belvidere, with a flow of 3,000,000 feet daily.

Nearing Completion

Six other tests, three in Belvidere and three in Millbrook, also were nearing completion in the Michigan sand.

The former included: Superior Drilling & Producing Co. No. 1 Elinora L. Smalley, C NW SW section 2; Hyatt & Norton No. 2 Fouts, C NW NW section 3, and Midland Petrol & Gas Co. No. 1 Ward Gibbs, C SE SW section 3.

The latter were: Wiser Oil Co. No. 1 Roy Knox, C SW SE section 30; same company's No. 1 L. C. Culey, C SE NW section 30, and Stewart-Atha, Inc., No. 1 E. Cogswell, C SW SW section 29.

Eleven other tests were active in Belvidere with seven locations, four others drilling in Millbrook and three in Hinton Township. Two are deep tests, namely John Mercurio, trustee No. 1 Whitcomb, NE NE NW section 7, Belvidere, cased above the Dundee and preparing to drill in to test for oil and Hal-Be-Oyle & Gas Corp. No. 1 F. Sears, C NE NW section 9, Hinton Township, just preparing to deepen after failure to develop commercial gas production in the Michigan Stray sands.

Crystal-Montcalm

Three tests were drilled into the Dundee in the Crystal-Ferris Townships field of Montcalm County, one making 60 bbls. the first hour, another not yet gauged and a third dry.

J. W. Leonard, Jr., trustee, No. 1 Maud Hoover well, SW NE NE section 11-10n-5w, Crystal Township, made 60 bbls. the first hour. Daugherty & Markey, Inc., No. 3 Fisher, SE SW SW section 36-11n-5w, Ferris Township, drilled into the Dundee oil sands, striking oil and gas. Operations were suspended to treat with acid before completion.

The "duster" was Stork Oil Co. No. 7 George and Etta Dickenson, NW SW SE section 3, Crystal Township.

Acid treatment boosted the flow of three Crystal Township wells previously drilled into the Dundee sands. Rowmor Corp. No. 1 Frank Lamphier, NE SW NE section 2, started flowing at the rate of 25 bbls. an hour but was checked to 250 bbls. a day. It failed to flow before treatment. McClanahan Oil Co. No. 2 Frank H. Lamphier, SE SW NE section 2, Crystal Township, flowed about 200 bbls. a day after retreatment. Same company's No. 1 Honderich, section 1, on the east edge of the Crystal field, more than doubled production from 200 to over 400 bbls. with acid treatment.

Her-Ka-Mon Oil & Gas Corp. No. 1 Will DeYoung, NE NE NW section 15, Crystal Township, south of Duck Lake, was drilling into the Dundee at more than 3,150 feet. Jetter Oil Co. No. 1 Laurence Pitcher, SE SE NW section 5, another extension test, also was near completion in the Dundee.

Vickeryville

Michigan Gas & Oil Corp. No. 1 F. Youngs, NE NW SW section 1-9n-6w, Bushnell Township semiwildcat, also was casing preparatory to drilling into the Dundee.

Jetter Oil Co. No. 1 C. McCracken, NW SE SE section 6-9n-5w, Bloomer Township, was another extension test cased above the Dundee and ready to drill in. Star Petroleum Corp. No. 1 James Ward, NE NE NW section 20, same township, was plugging back to the Traverse after failure in the Dundee. John F. Martin, Inc., No. 1 H. P. Christensen, SE SE NW section 20-10n-6w, Evergreen Township, was more than 2,600 feet deep and expected to test the Dundee soon.

Daily Crude Oil Co. No. 6 H. P. Christensen, SE NW NE section 10-12n-6w, Home Township, Montcalm County, was being completed in the upper Traverse formation, largest producing stratum in the Home-Montcalm field.

The Jetter-McCracken and Michigan-Youngs tests are considered important to indicate whether the Jetter-Long well brought in last fall as the discovery in the Vickeryville area will prove the opening of another central Michigan field of importance about 8 miles southwest of the Crystal pool or merely a stray well.

Since the Long well was brought in, a comparatively small producer in the Dundee, two attempted extension tests have failed, namely, the Old Dutch Oil & Gas Co. No. 1 Russell in section 27, and the Rowmor Corp. No. 1 Tow, section 36, both in Evergreen Township. The former was 2 miles northwest of the Long and the latter nearly as far due north.

The Star well flowed several barrels from the Traverse between strings of casing leading operators to plug back this week.

Durham & Jones started drilling toward the Traverse and Dundee after casing off water in the Marshall which drowned out a show of about 75,000 feet of gas encountered in the No. 1 Delos A. Towle, SE SE NW section 15-11n-8w, Pine Township, Montcalm County, wildcat.

McClanahan Oil Co. was drilling below 2,900 feet in the No. 1 Lincoln National Life Insurance Co. test, SW SW NW section 29-12n-5w, Richland Township, Montcalm County, wildcat.

Beaverton-Gladwin

Two tests were completed in the Beaverton-Gladwin area, one for a small producer in Beaverton Township proved territory and the other dry as an extension test in Grout Township.

The former was Smith Petroleum Co. No. 3 Mae E. Fruchey, SE SE SW section 2-17n-2w, which made about 65 bbls. swabbing before acid treatment.

Charles Bell No. 1 R. Ross, SE SE SE section 34-18n-2w, Grout Township, was a disappointment as a northeast extension test when it struck water 70 feet in the Dundee. It is about half a mile north of the Great Lakes Oil Co. No. 1 Campbell, producing on what appears to be the north edge.

The Bell-Ross test was the second failure in two successive weeks in Grout Township being preceded by the Mammoth Petroleum & Refining Co. No. 1 Abbie Mellinger, SE NW SW section 35, half a mile east and one location north of the Great Lakes well, and drilling into water 73 feet in the Dundee.

Production of the Triangle Oil Co. No. 1 Iosco Land Co. well in section 2, Beaverton Township, was boosted from 35 bbls. daily to 320 bbls. in 14 hours by acid treatment. It settled back to 200 bbls. the second day but was still rated a good producer for this field.

M. F. Whitehill No. 1 Dell com-

pleted some months ago in section 2. Beaverton, also was boosted to daily production of about 500 bbls. by acid treatment, it was reported.

Ten other projects were active in the county, deepest of which was T. F. Caldwell, Inc., No. 1 Edgar Parker, SE SE SE section 21, Grout Township, more than 2,600 feet down and the last of three Grout tests to the Dundee. M. F. Whitehill, who opened the field, has started five new tests in Beaverton Township.

Midland County

Two completions in Midland County last week left Greendale Township without an active drilling project.

Pure Oil Co. No. 5 Arthur N. Ward, SE SW SE section 7-14n-2w, Greendale, made 30 bbls. a day after acid treatment. No production figures were available on the Hubbell Oil Producing Co., Inc., No. 1 Edward Bernard, N NW SW section 10, same township, also drilled into the Dundee and equipped for pumping.

Pure last week tested the No. 4 Frank Howland, SE NW NW section 23-13n-1w, Porter Township, also drilled into the Dundee but not yet reported completed.

Two other Porter tests nearing completion in the Dundee were Jetter Oil Co. No. 1 French, NE SW SE section 14, drilling by tools at about 3,400 feet and Joseph Trever No. 1 Mrs. F. Forbes, SW SW SW section 22, on which operations were resumed after about a year's shutdown. It was about 3,200 feet deep.

Ten other tests were active in Porter Township, while 13 were drilling in Jasper Township, where Pure 2-D John B. Rayner, C N NW SE section 12-13n-2w, was the only one nearing completion in the Dundee this week. It was more than 3,000 feet deep.

J. V. Wicklund plugged his No. 1 Esther Rohrer, SW SW NW section 7-16n-1w, an Edenville Township wildcat abandoned as a dry hole.

King Drilling Co. suspended testing operations on its No. 1 George Gould, section 19-15n-2w, Geneva Township, Midland County, after treating a show in the Dundee.

Two other Geneva Township, tests were drilling and four rigging in this comparatively new producing area.

Ogemaw County

Four completions in Ogemaw County pools added 350 bbls. a day aggregate potential.

Largest was Melling Oil & Gas Co. No. 4 state of Michigan, recently deepened from Traverse to Dundee, where it was rated good for 150 bbls. a day in section 6-21n-3e, Mills Township.

Melling also completed its No. 7 State, SE NE NW section 6, Mills Township, for 120 bbls. a day.

Ogemaw Township's successful test was a 40-bbl. well brought in by McClanahan Oil Co., the No. 2 Frank and Joseph Heintz, NW NE NE section 24-22n-1e.

Weber Oil Co. No. 2 Stella Wilcox, deepened to the Dundee, added 40 bbls. a day in section 35-22n-2e, West Branch Township, the original producing area in the county.

Dr. William Kerr and others also deepened their No. 1 Boswell producer originally completed in the Dundee several years ago but down so low in production it was decided to drill in a little farther in hope of an increase. Results had not yet been reported.

Mills Oil, Inc., was still testing No. 1 Jaqua, NW NE SW section 6, Mills Township, in the Dundee.

Ogemaw Crude Oil Co. No. 1 Frank Baumchen, NW NW SW section 27, West Branch Township, was to be deepened to the Dundee after failure in the Traverse.

Fifteen other tests were active in Horton, Mills, Richland and West Branch Townships, while three locations were undeveloped as yet.

Isabella County

Pure Oil Co. No. 1 Chris and Lena Comstock struck a hole full of water in the Dundee in southwestern Isabella County, NE SW SW section 15-13n-6w, Rolland Township.

The Comstock tested an area about 4 miles north of the Home Township, Montcalm County, Traverse pool.

Drilling was suspended by George Hanners and others in their No. 1 J. Dargitz, SW SW SE section 20, same township, drilled to within 350 feet of the Dundee pay sands after a Traverse show.

A show of oil encountered in the Dundee limestone in the McClanahan Oil Co. No. 1 John L. Ettinger, SW NW NW section 34-15n-3w, Denver Township, was to be treated.

Western Michigan

A show of oil was reported in the Dundee at about 2,300 feet in M. J. Ingold No. 1 Dr. J. Miller estate, NW SW NW section 23-26n-11w, Blair Township, Grand Traverse County, a northwestern Michigan wildcat about 9 miles south of Traverse City.

James H. Barton No. 1 Albert H. Smith, SE NE NE section 29-10n-10w, Nelson Township, Kent County, was delayed drilling into the upper Traverse by a caving hole at 2,517 feet.

Michigan Oil Exploration Co. No. 1 George W. Groff, NE SW NW section 35-7n-9w, a Vergennes Township wildcat in the same county near Lowell, was deepening after failure in the Traverse and Dundee.

Northern Development Co. No. 1 Fred Burke and others, SW SE NW section 26-17n-15w, Logan Township, Mason County, had resumed drilling at 2,150 feet, headed toward the Dundee after upper Traverse failure. Dragoon Development Co. No. 1 W. K. Young, SW NW NW section 15, same township, was rigging to deepen after being shut down at 2,510 feet for several months, a Traverse and Dundee failure. It will be carried down to test the Sylvania at about 3,200 feet.

Jacob Bolema, Muskegon, spudded last week in the No. 1 Redwing Development Co., NW NW section 15-21n-16w, Manistee Township and county, second of a series of tests planned in the vicinity of Manistee. J. W. McIntosh, former Muskegon contractor, is drilling.

Luther Drilling Co., which has been rigged up for several weeks for Mr. Bolema and the Rademaker Chemical Corp. No. 1 Louis Sands Lumber Co. test, NE NW SW section 8, Manistee Township, is expected to start drilling within a week.

A caving hole was cemented and drilling resumed in Bolema and the Overland Petroleum Co. No. 1 Mary Bolt, SE NW SE section 10-10n-13w, Casnovia Township, only active project in Muskegon County.

Five other western Michigan tests, including two in Newaygo and three in Oceana County, were shut down.

Wildcats

Wallace Markle No. 1 Frank Opaka, NE NE SE section 4-15n-11e, Grant Township, Huron County, wildcat which struck a good showing in the Dundee at 3,007 feet two weeks ago, baled about 40 bbls. in four days last week after acid treatment. Its possibilities have not yet been determined, however.

Cardinal Crude Oil Corp. No. 1 J. J. Haviland, SE SE SE section 31-5n-3e, Antrim Township, Shiawassee County, was completed a 10 to 25-bbl. producer in the Berea formation at less than 1,000 feet deep after a shot.

Red-Man Oil Co. No. 1 J. Kahayda, SW SW SE section 9-20n-3e, Moffit Township, Arenac County, was dry in the Dundee, plugged and abandoned.

Lee Brown No. 1 S. Spicer, SW SW SW section 6-2s-8e, Canton Township, Wayne County, was expected to complete soon after drilling to a greater depth than 4,500 feet and several hundred feet in the Trenton limestone. It had a show of oil at about 3,000 feet.

McPherson Oil Co. was about ready to case the No. 1 George Sharrar, NE SW SW section 11-11n-4w, Sumner Township, Gratiot County, before drilling into the Dundee this week. The hole was more than 3,200 feet deep. The McPherson showed oil in the Traverse at 2,855 feet and will be plugged back and treated with acid if unsuccessful in the Dundee.

New Locations

Of 18 permits to drill issued by the state conservation department, 11 were for gas tests including 10 in the Tri-Townships field and one in Ferris Township, Montcalm County. Two of the remaining permits were for oil tests in Jasper Township, Midland County, one for Porter-Midland, one for Ogemaw Township and County, and one for Crystal-Montcalm, all in or near proved areas.

Only two were for new wildcat projects, one Goll, Graves & Mechling, Inc., No. 1 Frank I. Wixom, SW SW NE section 35-17n-1w, Tobacco Township, Gladwin County, and the other R. E. Leatherman, trustee, No. 1 W. Scheffler, SE SW NE section 24-3s-8e, Van Buren Township, Wayne County, in southeastern Michigan near the village of Denton.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, May 23.—Government figures just issued show that the total crude production from all Canadian fields in February was 107,928 bbls. compared with 121,231 bbls. in January and 111,545 bbls. in February, 1935. Production for the first two months of 1936 amounted to 229,159 bbls., a 3 per cent reduction from the total of 236,199 bbls. for the same period last year.

New Brunswick production in February was 1,006 bbls. against 1,013 bbls. in January. Ontario dropped from 15,047 bbls. in January to 10,845 bbls. in February. Alberta production was down from 105,171 bbls. to 96,077 bbls.

Natural gas production from all Canadian fields in February totaled 4,011,882,000 feet against 3,499,092,000 feet in January and 2,585,258,000 feet in February, 1935. For the two months of 1936 the total was 7,510,974,000 feet against 6,147,248,000 feet in the same period last year, an increase of over 22 per cent. Imports of mixed (natural and artificial) gas into Canada totaled 9,466,000 feet worth $6,595 in February against 6,709,000 feet worth $4,041 in January.

Turner Valley Field

In section 28-18-2w5, South Turner Valley, Turner Valley Royalties No. 1, LSD 13, on the west side of the structure, got the Madison limestone at 6,396 feet and is cementing casing in the top of the lime at 6,426 feet. This is the farthest west location in the South Turner Valley field, and will extend the proven area considerably west of Century Royalties No. 1, LSD 14, which is at present the largest producer in South Turner Valley.

In the south end of the same section, Carleton Royalties No. 1, LSD 2, is cleaning out in the lime. If this does not restore production it will be given acid treatment.

Farther north, in section 33-18-2w5, Sterling Pacific No. 3, LSD 13, on the west side of the structure, is preparing to resume after cementing casing at 325 feet.

In the north end of section 21-18-2w5, Sovereign Royalties, Ltd., has resumed work on Myers & Wright No. 1, LSD 14, from 2,240 feet. Hole has been cleaned out and 12½-inch casing run, after which it will be deepened about 100 feet before changing to rotary tools. British-American Oil Co., Vulcan Oil Co., Calmont Oils, Ltd., and Mack & Timms of Calgary are jointly interested in the test.

In the southeast corner of the same section, Highwood-Sarcee Oils No. 2, LSD 1, has resumed and is below 4,455 feet and logging high in comparison with other South Turner Valley wells. Farther north in the same section, Union Drilling Co. No. 2, LSD 7, is working on cellar. Steel derrick will be used with the rotary equipment from Union-Freehold Oil Corp. No. 1 which is now finishing in the lime. No. 2 offsets No. 1 to the west. Freehold Oil Corp., which participated in No. 1 well, has no interest in No. 2.

Jumping Pound Operations

On the Jumping Pound structure west of Calgary, Northwest Co. No.

(Continued on Page 82)

West and North Texas

By
L. E. BREDBERG

NEW POOL IN ECTOR COUNTY; GOOD GASSER IN SCHLEICHER

FORT WORTH, Tex., May 25.—A new wildcat oil well in northwestern Ector County, logging of a showing of oil and gas in a deep Schleicher County wildcat, and a gasser blowing out in the same county, were about the only features in the West Texas district in the past week. There were 38 more locations staked in the district and 42 wells were completed, 11 in Winkler County. Nine of the 38 new locations were for wildcats, with several semiwildcat locations also being reported.

John M. Cooper No. 1 Bert Page, in the NW quarter of section 40, Block L, G.H.&S.A. Survey, 9½ miles southeast of Eldorado in Schleicher County, blew out this week damaging connections and derrick, after building up a pressure of 2,000 pounds when shut in over night. This wildcat gasser, estimated good for nearly 14,000,000 feet of gas, was completed last December in the Pennsylvanian, from plugged back depth of 5,535 feet. It has been shut in since that time, the owner cracking the valve at intervals to prevent just such a blowout as happened this week. When opened it also produced some high gravity oil which has been sold for truck and tractor fuel in the surrounding territory. The owner has a franchise to furnish gas to Eldorado and will also probably supply gas to the town of Sonora about 30 miles to the southwest, laying lines to connect with gathering systems which are proposed for the towns. Mr. Cooper is also planning on drilling another test in the vicinity of this gas discovery.

Other tests in this county have encountered good oil and gas showings, but this is the first well capable of making commercial production of gas. Major companies have taken more interest in Schleicher County than heretofore and more drilling can be expected in the area in the future. One interesting test now drilling, Magnus Oil Co. No. 1 Judkins and Spencer, located in section 4, W. W. Russell grantee, logged a showing of oil and gas and made some salt water when swabbed down at 5,735 feet. It is now coring ahead below 5,800 feet, the deepest test now drilling in the county, seeking Ordovician production. Seven-inch casing was set at 5,540 feet.

Proven Wildcat Discovery

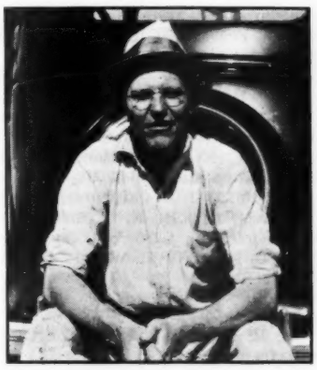
William H. Dunning No. 1 Cummins, located in the SE quarter of section 33, Block 45, Township 1n, T.&P. Survey, 3 miles southwest of the nearest production, and 4 miles northwest of the Goldsmith field in western Ector County, is now proven for a new discovery for the county, either opening another pool in this production-dotted sector, or proving an extension to one or more, or all of the producing areas to the southeast, east and northeast. It topped the pay at 4,244-57 feet, in lime, cemented 7-inch casing at 4,155 feet, and is shut in at 4,266 feet waiting for storage. It is estimated good for between 200 and 300 bbls. per day at its present depth, where it filled 3,000 feet with oil in three hours and made one head. More tests are slated to be drilled at once between it and the other producing areas mentioned above.

A test to be drilled by Broderick & Calvert in section 13, Block 43, Township 2s, T.&P. Survey, between the Foster or Odessa pool in eastern Ector County, and the recent mile northwest extension of the Stanolind Oil & Gas Co., will be an interesting one due to the possibility and expectation of it linking the new well with the newly discovered pool.

Acreage about one-quarter of a mile to the north of the Penn pool, in Ector County, will be tested by the Skelly Oil Co. in its No. 4 Scharbauer, which is located in the NE quarter of section 26, Block B-15, P.S.L. Survey. Companies and independents have been gradually widening the Penn pool on nearly all sides during the past several months, and this test may also prove another extension to the four-year-old pool.

Interesting Wildcat

Landreth Production Co. No. 1 Kirk, located in section 22, Block A-21, P.S.L. Survey, about 10 miles southeast of the recent discovery of Walsh and others on the Averitt ranch 3 miles northwest of Seminole, in Gaines County, is probably the most important wildcat test drilling in the district at the present time. It topped the brown lime at 4,021 feet, or 750 feet on subsea datum, and is drilling ahead below 4,140 feet. The Averitt gasser was shut in at total depth of 4,910 feet, estimated good for over 12,000,000 feet of gas per day, and this new test lays nearly between this gasser and the Humble-Means pool in Andrews County, 8 miles to the southeast.



F. C. Sneller, superintendent, West Texas Oil & Gas Co., Brownwood, Tex.

Extension

Hal Peck and others No. 1 Monroe, in section 25, Block 5, H.&T.C. Survey, southern Ward County, extended the Grand Falls production another half mile to the west when it flowed 15 bbls. of oil per hour during the week while cleaning out following a shot of 300 quarts from 2,197-2,317 feet.

Wildcat Locations

The Gulf Oil Corp. has staked location for its No. 2 McKnight, nearly 1 mile to the northeast of its discovery well in this outpost area of the Tubbs or Sand Hills pool in western Crane County. The new location falls in the NE quarter of section 9, Block B-21, P.S.L. Survey.

The Shell Petroleum Corp. has staked an interesting test 1½ miles to the west of the nearest production in the Hendricks extension in Winkler County. The new location falls in the SE quarter of section 32, Block 74, P.S.L. Survey. If it proves a producer it will open up a vast amount of prospective acreage in an area where big wells have been brought in recently by Henderson, Humble Oil & Refining Co. and the Wahlenmaier Petroleum Corp. R. H. Henderson has also staked a location in the same section, over a half mile to the north, which will also be an interesting test.

Taylor Test

George Callahan is now drilling around 270 feet on an extreme wildcat test on the S. J. Winter lands in the Alex Thompson Survey No. 20, about 4 miles north of Abilene in Taylor County. It will test a large block in which Grisham & Hunter of Abilene hold an interest, and is to go to 2,250 feet.

N. H. Martin is now drilling around 1,000 feet on a wildcat test located on the M. and E. B. Spurnier farm in Subdivision 1, W. C. Walker Survey No. 6, in Jones County.

The Lee Petroleum Corp. of San Angelo has purchased controlling interest in a 6,000-acre block about 12 miles west of the Taylor-Link pool in Pecos County, and has already staked location on the R. P. Hinyard ranch, in section 2, Block 144, T.&St.L. Survey, for a test of same.

WEST CENTRAL AND NORTH CENTRAL DISTRICTS

A group of West Central Texas operators met at Breckenridge last week to discuss production in Texas and especially in their district. The group, nearly all in accord, have proposed a measure to the Railroad Commission to cut the daily allowable production of all wells in their district in order to bring production down to demand. They suggest that wells producing from 2,000 feet or less be placed on a 100-bbl. daily top allowable, and those producing from greater depths be given a top of 150 bbls. per day. This cut in the daily allowable would take place mostly in the flush pools, other and older pools not being able to make any such a per well quantity. Such a cut would affect only about 10 per cent of the prorated wells in the area, and would fall on wells which would not be harmed by such a curtailment.

The Hawley pool, in Jones County, is the most prolific in the West Central district at present, with many good wells being brought in nearly every week, and with twin wells being drilled to test the different pay sands found in the pool. The top per well allowable of the pool is now 135 bbls. per well.

Cooke County Deep Test

Reese and Pewitt are cleaning out their No. 1 A. A. Riddle, in Lot 4, Block 3, University League No. 9, in the Muenster pool, Cooke County, from its present total depth of 3,109 feet to around 6,000 feet. The operators hope to find commercial production below the regular Muenster pay, and will carry the well to this depth in quest of picking up a new deep sand for the county. Several other deep tests are drilling or are planning to be started within the near future in the county, Oklahoma as well as Texas operators being interested in shallow and deep drilling in the county.

Anderson & Kerr No. 1 Amanda Wilson, located in the Hiram Stroud Survey, and a west offset to the same operators' discovery on the Bruhlmeyer farm, which proved the best well ever completed in the county, is now down 2,170 feet without showing for a producer. The discovery logged the sand pay at 2,009 feet, consequently this offset appears to have missed that sand. F. W. Merrick and

Rex Carrothers, division material man for Humble Oil & Refining Co., Cisco, Tex.

others No. 1 Bell, in the northwest part of the J. S. Martin Survey, and to the south of the Bruhlmeyer discovery, apparently missed production in the sand found in the discovery and is drilling below 2,200 feet. It picked up only a showing of oil from 2,022-31 feet. This new pool is about 3 miles east of Gainesville, in Cooke County.

Panhandle District

There were 19 tests completed in the Panhandle district this week and 16 locations were staked for new tests. The allowable for the field was cut by the Railroad Commission from 60,800 bbls. per day to 59,490 bbls., produced by 2,866 wells in five counties, Carson, Gray, Moore, Hutchinson and Wheeler. The displacement factor of gas, effective May 20, is 1,071,000 feet per day.

WEST TEXAS COMPLETIONS

Ector County

Eppenauer Drilling Co. No. 2 Kloh, 4,070-4,260 feet, shot, 463 bbls.

Crane County

McCamey No. 1 McClintic, dry and abandoned 3,356 feet, elevation 2,797 feet. Rushwold Oil Co. No. 1 Cowden, 2,309-2,460 feet, shot, 150 bbls. Magnolia Petroleum Co. No. 5 Edwards, 3,160-3,521 feet, 290 bbls. per hour.

Andrews County

Humble Oil & Refining Co. No. 1 Spinks, 4,400-4,550 feet, acidized and shot, 315 bbls.

Fisher County

Southern Oil Corp. No. 1-C Pardue, 3,108-3,133 feet, acidized twice, 50 bbls.

Glasscock County

Continental Oil Co. No. 5-S Settles, 1,206-1,245 feet, 17 bbls.

Howard County

Continental Oil Co. No. 8 Eason, 2,439-2,447 feet, acidized, 44 bbls. per hour.

Pecos County

Aero Oil & Gas Co. No. 1 Gregg, total depth 1,470 feet, 346 bbls. Tex-Mex Petroleum Co. No. 1 Marathon-Brandenburg, 2,225-2,422 feet, shot, 41 bbls. Stanolind Oil & Gas Co. No. 19-B Tippett, 388-420 feet, 107 bbls. oil, 6 bbls. water. Cardinal Oil Co. No. 38-E Tippett, 367-550 feet, 17 bbls. oil, 17 bbls. water. Easter and McCurdy No. 4-A Smith, 810-838 feet, 25 bbls.

Jones County

Roeser & Pendleton No. 1 Hank, dry and abandoned 2,370 feet. Ungren & Frazier No. 1 Wood, dry and abandoned 2,402 feet. Humphrey No. 1 Radford, dry and abandoned 2,743 feet.

Upton County

Perry No. 1 Sherk estate, 2,203-2,291 feet, acidized, 502 bbls. Eppenauer Drilling Co. No. 1 Perry, 1,942-2,093 feet, 275 bbls. oil, 285 bbls. water. Ellis and others No. 3-A Robbins, 2,130-2,158 feet, acidized, 624 bbls. Black and others No. 4 Lane, 2,242-2,351 feet, acidized, 357 bbls. Burke & Thomas No. 3 Robbins, 2,085-2,151 feet, shot and acidized, 330 bbls.

Ward County

Lindsay and Bolin No. 2 Stewart, total depth 3,118 feet, plugged back to 2,990 feet, shot, dry and abandoned. California Co. No. 19 Gordon, 2,300-2,524 feet, shot, 1,056 bbls.; No. 22 Gordon, 2,335-2,526 feet, shot, 650 bbls. Thorne, trustee No. 2 Beatty, 2,400-2,522 feet, shot, 465 bbls. Shell Petroleum Corp. No. 5 Sloan, 2,448-3,046 feet, shot and acidized, 700 bbls. Pat Hill and others No. 3 Clements, 2,245-2,331 feet, 355 bbls. Luce & Ice No. 2 Stewart, 2,378-2,479 feet, shot, 417 bbls. Wahlenmaier Petroleum Corp. No. 4 Humble-Potts, 2,230-2,360 feet, shot, 423 bbls.

Winkler County

Magnolia Petroleum Co. No. 2 Colby, 2,853-3,183 feet, shot, 74 bbls.; No. 21 Walton, 2,830-2,929 feet, shot, 418 bbls.; No. 19 Walton, 2,806-2,911 feet, shot, 455 bbls.; No. 1 State-Walton, 3,082-3,695 feet, plugged back to 3,171 feet, shot, 21 bbls. Humble Oil & Refining Co. No. 2-A Colby, 2,788-3,000 feet, shot, 1,200 bbls. Falcon Oil Co. No. 3 McCutchen, 3,287-3,680 feet, shot, 211 bbls. Texas Pacific Coal & Oil Co. No. 9 Daugherty, 2,825-2,930 feet, shot, 730 bbls. Shell Petroleum Corp. No. 4-J Hendrick, 2,787-3,018 feet, shot, 497 bbls. Atlantic Oil Producing Co. No. 6-J Sherk, 2,810-3,040 feet, shot, 984 bbls. Sun Oil Co. No. 1 Daugherty, 2,775-2,930 feet, shot, 440 bbls. Fields and others No. 1 Pure-Clapp, 2,830-3,035 feet, shot, 607 bbls.

NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns No. 1 L. F. Wilson-CC, 1,622 feet dry. Consolidated Oil Co. and others No. 1 Morrison, 1,265-84 feet, 10 bbls. Continental Oil Co. No. 54 S. M. Gose, 1,612-16 feet, 22 bbls. Deep Oil Development Co. No. 13 Wilson 4-A, 2,213-24 feet, 1000 bbls. H. H. Fraser No. 12 Wilson-B, 893 feet, dry. Hamer & Scholl No. 5 Archer County, 961-1,003 feet, 7 bbls. W. L. Hawkins No. 7 W. R. Pace, 1,192-1,206 feet, 7 bbls. Harry Hines and others No. 1 J. J. Perkins, 1,502 feet, dry. Kimbell & Bohner No. 10 J. D. Carpenter, 1,043-59½ feet, 40 bbls.; No. 11 J. D. Carpenter, 1,054½-63½ feet, 10 bbls. E. B. Madden No. 23 Richardson, 1,286 feet, dry. Regal Oil Co. No. 4 L. F. Wilson, 1,607-12 feet, 350 bbls.

Baylor County

K. R. March No. 1 W. B. Self, 2,001 feet, dry.

Cooke County

Hudspeth and others No. 6 Trubenbach-B, 968 feet, dry. F. W. Merrick, Inc., No. 12 Hess, 1,255-73 feet, 357 bbls. Mudge Oil Co. No. 13 Johnson, 1,055-1,115 feet, 45 bbls. Petroleum Production Co. No. 1 Mount, 1,663-69 feet, 60 bbls. Seitz Comegys & Seitz No. 7 A. W. Trew-A, 1,467-72 feet, 20 bbls.

Clay County

A. N. Gamble No. 1 J. B. L. Hansard, 1,352 feet, dry.

Montague County

Continental Oil Co. No. 31 Maddox-A, 892-902 feet, 25 bbls. Perkins & Cullum No. 9 N. J. Howard, 1,178-1,381 feet, 25 bbls.

Jack County

Knott and others No. 1 Pruitt (Webb), 340 feet, junked.

Wichita County

A. Holtzon No. 2 Jackson, 632-62 feet, 10 bbls. Worth Oil Co. No. 4 Jackson, 637-702 feet, 19 bbls. A. E. Blair No. 1 C. A. Mertins, 910 feet, dry; No. 2 C. A. Mertins, 465-73 feet, 5 bbls.; No. 3 C. A. Mertins, 464-67 feet, 4 bbls. W. C. Forbess No. 1 Foster Allen, 603 feet, dry. T. F. Hunter No. 1 Gibson, 2,700 feet, dry. King Oil Co. No. 8 Waggoner-H, 1,578-82 feet, 200 bbls. Magnolia Petroleum Co. No. 23 R. S. Allen, 1,480-86 feet, 2 bbls. Rathke Oil Co. No. 8 J. A. Watkins, 662-74 feet, 6 bbls. Ray & Staniforth No. 2 Robinson-A, 1,836 feet, junked. Sheldon & Venmex No. 3 Robinson, 1,830-1,917 feet, 100 bbls. Wolf & Hull No. 10 Kemp & Kempner, 731 feet, dry.

Wilbarger County

Deep Oil Development Co. No. 5 Waggoner, 1,878-1,910 feet, 15 bbls. Lawson & Leavell No. 6 Waggoner-A, 990-1,002 feet, 100 bbls. Pois & Schulz No. 1 W. T. Waggoner, 1,602 feet, dry. Wheeler & Brashear No. 2 Waggoner-A, 428 feet, dry.

Young County

A-U-2 Oil Co. No. 1 Benson, 1,004 feet, dry. L. T. Burns No. 2 Benson-A, 913 feet, dry. Cato Oil Co. No. 11 Hamilton, 875-912 feet, 50 bbls.; No. 4 Hamilton-B, 957-67½ feet, 5 bbls. Farris & Jennings No. 1 Sweetlick, 1,375 feet, dry. L. V. Hull No. 4 E. J. Leslie, 953 feet, dry. Moran & Wotola No. 10 W. B. Howard, 921 feet, dry. Texas Co. No. 1 W. W. Farmer, 850 feet, dry. Underwood & Campbell No. 6 Campbell-E, 865-79 feet, 70 bbls. R. J. Watson No. 1 Myrtle Watson, 807 feet, dry. West & Honea No. 1 G. W. Stewart and others, 844-56 feet, 20 bbls. D. M.

Dave Hemsell, head of land department, Phillips Petroleum Co., Midland, Tex.

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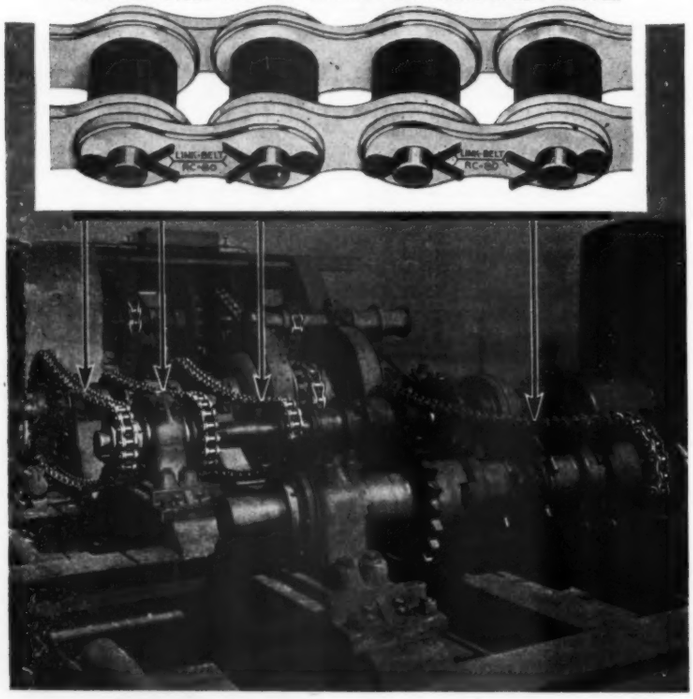

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Knox No. 4 Eugenia Taylor, 2,663-84 feet, 50 bbls. Roy Wegener No. 1 J. W. Davis, 320 feet, temporarily abandoned.

PANHANDLE COMPLETIONS

Carson County

Gulf Oil Corp. No. 7 Block, 3,025-3,153 feet, 510 bbls. pumping, shot. Huber Gas Co. No. 1 Burnett "P," 2,265-2,533 feet, 22,160,000 feet of gas, shot. Phillips Petroleum Co. No. 6 Cooper, 2,980-3,000 feet, 542 bbls. pumping, shot. Sinclair Prairie Oil Co. No. 3 Cooper, 3,022-3,090 feet, 310 bbls. pumping.

Gray County

Dyck Oil Co. No. 3 Saunders, 2,798-2,885 feet, plugged back to 2,880 feet, 826 bbls., shot. Jones and others No. 5 A. J. Culler, 3,155-3,327 feet, 1,143 bbls. pumping. Pampa Production Co. No. 4 Harrah, 3,115-3,224 feet, 335 bbls. pumping, shot. Sunray Oil Co. No. 2 Lovett, 2,810-2,889 feet, 579 bbls. pumping, shot. Eben D. Warner No. 3 Webb, 2,460 feet, dry and abandoned.

Hutchinson County

Phillips Petroleum Co. No. 1 Bryan, 2,990-3,061 feet, 662 bbls. pumping, shot. Powers Petroleum Co. No. 2 Hodges, 2,998-3,055 feet, 344 bbls. pumping, shot. Harry Stekoll No. 5-H Whittenberg, 2,956-3,017 feet, 293 bbls. pumping, shot.

Moore County

Anderson and Kerr No. 1 C. R. Jones, 2,830-3,539 feet, 44,358,000 feet of gas; No. 1 P. Sullivan, 2,900-3,590 feet, plugged back to 3,500 feet, 27,960,000 feet of gas, shot. Canadian River Gas Co. No. 2-B Terry Thompson, 3,118-3,500 feet, 53,120,000 feet of gas. Magnolia Petroleum Co. No. 2 Britian, 2,810-3,051 feet, 35,000,000 feet of gas. Phillips Petroleum Co. No. 1 H. M. Kelly, 2,900-3,253 feet, 65,196,000 feet of gas.

Wheeler County

Elbar Corp. No. 8 Noel, 2,425-2,497 feet, 146 bbls. pumping, shot. Smith Brothers No. 5 Johnson, 2,485-2,550 feet, 3,352 bbls.

Kansas Fields

(Continued from Page 65)

in the Oxford area, was the only Sumner County completion. It had water in the hole and was dry and abandoned at 2,783 feet, total depth. Stalnaker sand was topped at 1,985 feet; Kansas City lime, 2,670 feet.

Trego County

Continental Oil Co. No. 1 J. H. Carpenter, C NW NW section 23-11-23w, in Trego County, was a location.

Decatur County

Winkler & Koch were building rig for No. 1 Vessey, C NW SE section 26-3-26w, a new wildcat test in Decatur County.

Woodson County

Quartet Oil Co. No. 4 Otto, SW NE SW SW section 21-23-14, in Woodson County, was acidized with 2,000 gallons, pumped 85 bbls. of oil in 24 hours and was completed. Lime was topped at 1,632 feet. It had pay at 1,637-55 feet, total depth.

New work in Woodson County: Henderson Oil Co. No. 1 Vostarz, NW NE NE section 23-23-14, rigging up machine; Bell & Alexander No. 1 Kash, NW cor. section 26-23-14, machine; Pure Oil Co. No. 17 Winterscheid, SE NE SW section 6-24-14, moving in machine; Woodson County Pipe Line Co. No. 7 Winterscheid, SW NW SE section 6-24-14, drilling at 1,275 feet; C. L. Sheedy and others No. 2 J. W. Tipton, NE NW NW section 28-25-14, rigging up machine.

Stevens County

Work was starting at three new tests in Stevens County. Texas Interstate Pipe Line Co. No. 1-18 Gregory, C NE section 18-33-38w, was building rig. Same operator's No. 1-30 Gregory, C SE section 30-33-38w, was a location; same operator's No. 1-19 Bane, C SE section 19-33-38w, was a location.

Scott County

Location has been staked for a new test in the Shallow Water area of Scott County. It is Atlantic Oil Refining Co. No. 1 Mark "C," C NE SE section 15-20-33w.

Rooks County

Superior Oil Co. and associates were rigging up rotary at No. 1 Johnson, NW NW NE section 35-10-19w, in Rooks County.

Ness County

A wildcat test was being started in Ness County at Newton Development Co. No. 1 Tenny, NW NW SE section 19-18-25w. Operators were moving in material.

Morton County

Two new tests were starting in Morton County. Texas Interstate Pipe Line Co. No. 1-8 Rickart, C SE section 8-35-39w, was a rig. Same operator's No. 1-9 Phillips, C SE section 9-35-39w, was spudding.

Haskell County

Helmerich & Payne staked location for No. 1 Meredith, C SW section 10-30-33w, wildcat on the gas trend in Haskell County.

Marion County

Phillips Petroleum Co. No. 44 Townsend, SE SE SE section 5-22-4, an old well in Marion County, was deepened from 2,478 feet to 2,688 feet, had a hole full of water and was dry and abandoned.

Southwest Texas Fields

(Continued from Page 62)

important test of the probable size and trend of the field. In Lopez two completions were made. It remains the most active field in Webb County with O'Hern second.

Wildcat Completions

Wildcat activity and Samfordyce field extensions commanded the interest of operators in the Lower Rio Grande Valley during the week. Four completions were made in Samfordyce, two constituting northeast extensions to the field. The new deep sand of the field will be tested for production early in the week when E. A. Graham No. 1 Santos Villareal perforates at 3,057-63 feet. J. T. Barlow No. 1 Marta Flores de Chapa, which discovered the show in the deep sand will be reworked. It was completed as a gasser.

A new wildcat test for the valley will be in Cameron County located on the Port Isabel Irrigation Subdivision. It is scheduled to begin soon and will be a 7,500-foot test to be drilled by W. W. Ely.

The detailed completion and drilling report on the Southwest Texas fields will be found in the section devoted to drilling operations, starting on Page 83.

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Eastern Field Report

By STAFF CORRESPONDENT

GOOD CLINTON SAND WELLS FOUND IN LICKING COUNTY

PITTSBURGH, Pa., May 25.—Another deep sand test in West Virginia proved to be a gas well although considerably smaller than the others. In Loudin district, Kanawha County, the United Carbon Co. completed a test on the C. C. Dickinson farm in the Oriskany sand at a total depth of 5,033 feet and it gauged 700,000 feet a day after the shot. This is south of the good gas wells on the Milliken anticline and west of the gas wells on the Warfield anticline.

Four additional locations for deep tests were made during the week. In Malden district, the United Fuel Gas Co. made a location for an Oriskany test on the George Creek Land & Mining Co. land on George Creek about 3,800 feet southwest of the South Penn Oil Co. test on the Katherine C. Scott farm, which was a very good gas well.

In Elk district, Kanawha County, United Carbon Co. made a location for a test on the Henry C. Smith farm (mapped Bertha A. Hammock) located about 1 mile north of the Columbian Carbon Co. No. 2 on the G. and D. Copenhaver farm. In this district, the Columbian Carbon Co. has made a location on the Bertha Hill Zimmerman farm on Mile Fork of Coopers Creek, 2 miles west of the only Oriskany sand oil well on the W. L. Burdette farm. On Aarons Fork of Little Sandy Creek, United Fuel Gas Co. has a location on the Alexander J. Bruen and others farm (mapped as the H. S. Moles) about 1,200 feet north by east of the Copenhaver No. 3.

In Loudin district, Godfrey L. Cabot, Inc., made a location on the Marmet Coal Co. lease on Lens Creek about 4½ miles south of the gas well completed in the past week on the C. C. Dickinson farm.

In Elk district, Columbian Carbon Co. is down 4,925 feet after running casing in the test on the Elkland Improvement Co. tract. On the M. M. Robertson farm, same company is drilling at 5,285 feet. On the W. L. Burdette No. 2 lease the old No. 1 is being drilled down to the Oriskany sand and it is 4,965 feet deep. The test on the W. H. Baxter and others lease is down at 4,719 feet with a fishing job. V. C. Smith and others are shut down at 5,538 feet on the island at the mouth of Coopers Creek with the bailer in the hole. The Yoak Oil & Gas Co. is drilling at 1,400 feet on the Goshorn heirs farm after running 8¼-inch casing. Benedum & Trees have reached 1,423 feet in the second test on the Mary C. Wingfield farm. Godfrey L. Cabot, Inc., has part of the material on the ground for the test on the R. L. Bibby farm. The Glen Oil & Gas Co. is down 1,900 feet in the test on the Virginia Joint Stock Land Bank farm.

In Malden district, Godfrey L. Cabot, Inc., is shut down on the W. D. Lewis farm and is cementing casing at 4,300 feet. The company's No. 8 on the William Tompkins heirs farm is drilling at 980 feet, and the second test on the Nellie B. Tompkins farm is drilling at 2,395 feet with the rig standing for the No. 3, same farm. On the Campbells Creek Coal Co. lease Cabot is down 4,415 feet in No. 9 and 3,408 feet in No. 10. The United Carbon Co. has reached a depth of 900 feet on the J. Q. Dickinson farm.

In Loudin district, Kanawha County, Owens Illinois Glass Co. is drilling at 3,067 feet on the L. A. Christy farm, the gas having failed in the Salt sand. In Big Sandy district, the United Fuel Gas Co. is hauling in material for the test on the L. D. Updegraff farm.

During the week in the lower eastern fields, 22 wells were completed and in addition there were three dry holes. Eleven were gas wells and 11 producers with an initial production of 363 bbls., most of which was in Southeast Ohio.

SOUTHEAST OHIO

The best producers for the week were in Licking County, Ohio. Here the Hope Construction & Refining Co. completed No. 3 Jesse Cartnal, in NW quarter section 17, Hanover Township, in the Clinton sand at a depth of 3,083 feet. After shot, it produced 205 bbls. the first day. In the NE quarter of section 2 of this township, the Edward H. Everett Co. completed No. 9 on the Feliz Montgomery farm in the Clinton sand, depth 3,025 feet, and it produced 120 bbls. the first day after a shot.

In Athens County, A. D. Townsend and others completed a test on the G. E. Shelton farm near Jerseyville in section 23; Lodi Township, in the shallow shale at a depth of 465 feet. It is a gas well gauging 500,000 feet a day.

In Guernsey County, the Preston Oil Co. and others drilled a second test on the David C. Stonebrunner farm in SE quarter section No. 1 in Wills Township through the Berea grit, total depth 1,483 feet. When drilled in it had a showing of 43,000 feet of gas and a very light showing of oil. After a shot the gas blew down and there was no additional oil and it may be considered a dry hole.

In Jefferson County, Everett Ferguson & Son completed a test on the Alva D. Gait farm, SW section 30, Saline Township, in the Berea sand at a depth of 750 feet. It produced 1 bbl. the first day, natural, which was increased to 8 bbls. the first day after shot.

In Knox County, J. B. Reed drilled a test on the John Russell farm, Lot 15, Berlin Township, through the Clinton sand to a depth of 2,601 feet. It is a dry hole, located west of the Love farm on which there was production.

In Madison Township, in Licking County, section 23, George H. Long completed No. 4 Eliza J. Fulton in the Berea sand at 725 feet. It is showing for a 2-bbl. pumper.

In Monroe County, Gordon Greene and others completed a test on the N. M. Leasure farm, SW section 16, Franklin Township, in the Lime at a depth of 1,275 feet. After the shot, it made a 1-bbl. producer. It was drilled deeper from the Salt sand to the lime.

In Perry County, the Thistle Oil Co. completed No. 12 Carlos C. Stotler farm, SE quarter section 28, Monroe Township, in the Berea sand at a depth of 1,080 feet. After a shot, the well produced 10 bbls. the first day.

In Washington County, Mary Wickens and others completed No. 17 William Davidson on Macksburg Ridge in section 30, Aurelius Township, in the Macksburg 700-Foot sand at 1,035 feet. After shot it produced 2 bbls. the first day.

SOUTHWEST PENNSYLVANIA

No wells were completed in Southwest Pennsylvania during the week. In Greene County the McCall Drilling Co. is rigging up on the Ben Chambers farm in Aleppo Township to deepen the No. 1. In Springhill Township, the Dun Mar Oil Co. is drilling at 800 feet on the Spencer Hostutler farm.

In Richhill Township, Greene County, the Natural Gas Co. of West Virginia is rigging up on the Lewis Baltzell farm. Lewis & Co. are down 2,165 feet on the Samuel Chess farm. Null & Co. have made a location on the Ben Polen farm in this township.

In Morris Township, Greene County, the Duquesne Gas Co. is drilling at 2,440 feet on the J. M. Clutter farm. In Center Township, the Carnegie Natural Gas Co. has completed the rig on the J. W. Milliken farm.

In Amwell Township, Washington County, the South Penn Oil Co. is down 2,365 feet in the test on the Anna A. Lowery farm, 1,450 feet in a test on the Hazel M. Seese farm, and 1,200 feet after running 8¼-inch casing on the J. Q. Zimmerman farm. The Union Gasoline & Oil Corp. has reached a depth of 2,615 feet in the test on the Marion C. Johnson farm.

In East Finley Township, Washington County, the Natural Gas Co. of West Virginia is down 1,661 feet in the test on the J. R. Day farm. The Manufacturers Light & Heat Co. is drilling at 480 feet on the A. J. Sanders farm and 740 feet on the Lucy McCracken farm.

In South Franklin Township, Washington County, the Carnegie Natural Gas Co. is drilling at 509 feet on the Belle A. Jones farm. In Chartiers Township, the Keystone Gas Co. is drilling a test on the Albert Allison farm, which is down 900 feet. In Peters Township, R. M. Duden and others are deepening the test on the Parks heirs farm.

Deep Tests

Norwood Johnston and others reached a depth of 3,550 feet in the deep test on the James McBurney farm in Pleasant Township, Washington County, and shut down. The deep test of William Snee and others on the Summit Hotel property on Chestnut Ridge in South Union Township, Fayette County, made no hole during the week. The total depth is 6,270 feet to date, with the casing off bottom.

WEST VIRGINIA

Several small producers were completed in West Virginia during the week. In Pleasants County, the Accidental Oil Co. completed No. 3 D. W. Dillon in Lafayette Township in the Maxon sand at a depth of 1,569 feet. It is a 5-bbl. well along with about 150,000 feet of gas.

In Ritchie County, Creed Barker and others completed a test on the Henry Barker farm in Murphy district in the Maxon sand at a depth of 1,752 feet. It is showing for 5 bbls. a day after shot. In Union district, the Carnegie Natural Gas Co. deepened the No. 2 on the A. H. Tate farm through the Big Injun sand to 2,250 feet and it is showing for 4 bbls. a day along with about 150,000 feet of gas.

In Wirt County, John J. Shore completed a second test on the Laura Mayle farm in Clay district in the Mitchell sand at a depth of 460 feet. It is a 1-bbl. pumper. In Spring Creek district, O. D. Jones drilled a test on the Laura DeVall farm through the Berea sand to a depth of 2,400 feet and it was dry in all formations and is being abandoned.

Gas Wells

In Boone County, the Pure Oil Co. completed No. 81 Federal Coal Co. lease in Sherman district at a depth of 1,071 feet, the Salt sand. It is a gas well gauging 431,040 feet a day. In Scott district, Ira G. Sayres completed deepening the No. 8 on the Roman Pickens farm at 3,710 feet and it is a gas well gauging 268,000 feet a day. There were slate and shells from 2,320-3,176 feet, with gas at 2,737-3,128 feet. The Brown shale was at 3,176-3,645 feet, with gas at 3,290-3,636 feet.

In Cabell County, W. C. Kingery completed a fair gas well on the C. B. Harbour farm in McComas district. The gauge is 4,000,000 feet a day from the Big Injun sand at 1,310-13 feet. The Big Lime was at 1,078-1,238 feet. In this district, the West Virginia Gas Corp. completed a 150,000-

(Continued on Page 82)

Oklahoma Operations

By
DAL DALRYMPLE

MAY DEFINE NORTHWEST OF OKLAHOMA CITY EXTENSION

Production limits of the Capitol extension area of the Oklahoma City field may be defined on the northwest by the Anderson-Prichard Oil Co. No. 1 Wheeler, SE cor. SW section 15-12-3w, a so-called "mystery" well on which official information was withheld. It is located on the northwest side of the extension area and about one-fourth of a mile west of the Barnsdall Oil Co. No. 1 Banks-Geyer, SE SW SE section 15-12-3w, which recently extended the producing area north of the city limits. The No. 1 Wheeler was unofficially reported producing about 18 to 20 bbls. of oil an hour, with little gas pressure and showing a trace of salt water. The crew was circulating in an effort to increase production, but it was thought unlikely the hole would be deepened. Top of Wilcox sand was said to be about 6,463 feet, with total depth below 6,500 feet. Structurally, it was running about 55 feet lower than the No. 1 Banks-Geyer.

The comparatively poor showing to date in the No. 1 Wheeler dims prospects for big production in three drilling wells due north of it. These are the W. S. Key No. 1 Pryor, drilling below 6,000 feet, and the Big Chief Drilling Co. No. 1 Hagenmeister and the Champlin Refining Co. No. 1 Robertson, the farthest north drilling well in the field, were at around 5,300 feet. Locations for several other wells have been staked to the north and west of the No. 1 Wheeler. Geologists believe the Wilcox sand may extend as far north as Northeast Forty-second Street, which is just north of the No. 1 Robertson location, and that wells that far north will be strippers, if productive at all. That is theory, however, and yet to be proven or disproven by the drill.

Other operations in the Capitol extension were largely at routine drilling depths. There has been no rush to start new wells in the three new areas approved for drilling at the May 12 election. The Oklahoma City council voted last Friday to zone exclusive Lincoln Terrace and the two adjoining areas for drilling. There is doubt, however, that the new drilling ordinances supersede plat restrictions in two of the areas, and those opposing drilling in the exclusive districts were expected to continue their fight in the courts.

New Wildcat Activity

New wildcat activity is getting under way in southeastern Oklahoma. Oklahoma District Oil Co. No. 1 Beeler, NE NE SW section 7-7-14, near Lake McAlester in Pittsburg County, is one of the new wildcats just starting work. It is to be a Wilcox sand test, that formation being expected at less than 5,500 feet. The operating company, which is owned by Joe I. Cromwell, discoverer of the Cromwell pool, J. W. Cromwell, W. B. Skirvin and O. W. Skirvin of Oklahoma City, has a spread of 23,850 acres in Pittsburg County. There are five surface closures and two seismograph closures on the block, which will be operated as a unit lease.

Two wildcat tests were starting in Atoka County; a wildcat test was due to be started by Claude Tyler of Shawnee at a location in section 19-3s-15, Pushmataha County; and two more tests were scheduled for Coal County, the latter on the southeasterly trend from the Jesse field of Pontotoc County.

Oklahoma County

The four official completions in Oklahoma County included two producers in the Capitol extension of the City field, one in the Edmond pool and one in the Britton district. British American Oil Co. No. 2 Burnham Addition, SW NW SW section 23-12-3w, on the east side of production, flowed 4,370 bbls. of oil in six hours, establishing 24-hour potential of 17,802 bbls., at 6,447 feet, total depth. It was deepened to 6,521 feet and flowed 7,996 bbls. in 21 hours and 15 minutes with drill pipe in the hole, but retained the original potential. Second Wilcox sand was topped at 6,372 feet. Same operator's No. 2 Alta Vista, SW NW SW section 23-12-3w, made 24-hour potential of 16,872 bbls. at 6,450 feet, total depth. It flowed 4,029 bbls. of oil in six hours. It was deepened to 6,511 feet and flowed 7,525 bbls. in 20 hours and 55 minutes, partly by heads, and retained old potential. Top of second Wilcox sand was 6,365 feet.

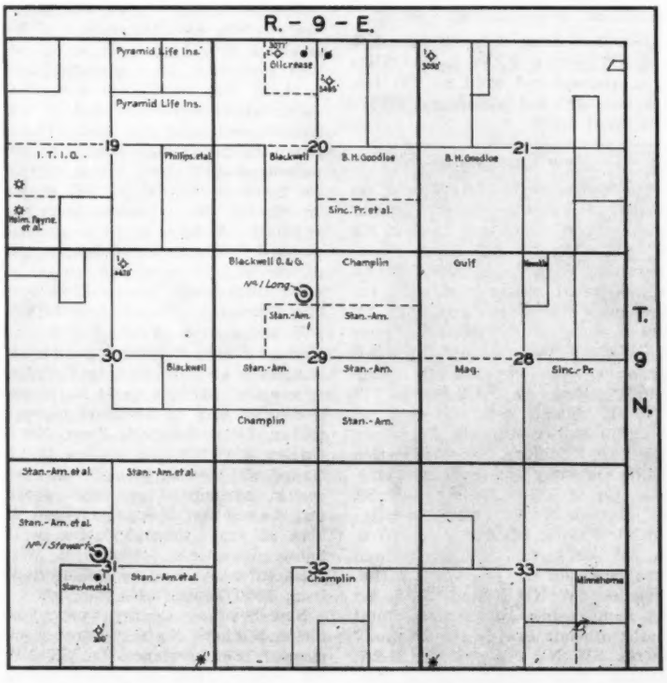
Slick-Urschel Oil Co. No. 3 Suneram, SW NW NE section 6-13-3w, in the Edmond area, was completed at 6,706 feet, total depth. It flowed 1,148 bbls. of oil in four hours, making potential of 6,888 bbls. Gas gauged 13,000,000 feet. Simpson Dense was topped at 6,442 feet; Dolomite, 6,504 feet; second Wilcox sand, 6,666 feet.

Slick-Urschel Oil Co. and others No. 2 McGrew 40-C, SE SW SW section 20-13-3w, in the Britton district, made 24-hour potential of 5,576 bbls. and was completed at 6,745 feet, total depth. It flowed 929 bbls. in four hours on test, after acidizing with 5,000 gallons. Before treatment, it flowed 1,898 bbls. in 24 hours. Production was from Dolomite, topped at 6,574 feet, and first Wilcox sand, topped at 6,687 feet.

New work in Oklahoma County: Empire Oil & Refining Co. and Heenan & Coe No. 4 Levy, SE NE NE NW section 22-12-3w, cellar cemented; same operator's No. 5 Levy, SE SE NE NW section 22-12-3w, cellar cemented; the No. 6 Levy, NE NE SE NW section 22-12-3w, cellar forms; the No. 7 Levy, SE NE SE NW section 22-12-3w, cellar forms; the No. 8 Levy, NE SE SE NW section 22-12-3w, cellar forms; Marathon Oil Co. No. 2 Hathaway, SE NE NW section 6-13-3w, location; same operator's No. 1 Pettigrew, SE SW SE section 8-13-3w, location; Pure Oil Co. No. 9 Malm, SE NW SW section 30-14-3w, location.

Clinkscales & Brown No. 1 Myers, NW SE SE section 17-13-3w, in the Britton area, flowed 15 bbls. of oil and produced 3,000,000 feet of gas in 24 hours after bailing to bottom at 6,636 feet. It was acidized, made one head and then flowed 5 bbls. of oil an hour for 12 hours, with 2,500,000 feet of gas. Marathon Oil Co. and others No. 1 Winters, SW SW NW section 20-13-3w, bailed down to bottom at 6,704 feet, and flowed 165 bbls. of oil and 192 bbls. of water in 18 hours. It later flowed 190 bbls. of oil and 339 bbls. of water in 24 hours.

In the Edmond pool, Pure Oil Co. No. 7 Malm, SW NE SW section 30-14-3w, topped first Wilcox sand at 6,538 feet; second sand, 6,628 feet; total depth, 6,697 feet. It was bailed down 1,900 feet and came in flowing 530 bbls. of oil in two and one-half hours, with 7,400,000 feet of gas. Continental Oil Co. No. 7 Young, NE NW NW section 31-14-3w, topped second Wilcox sand at 6,657 feet and was bottomed at 6,710 feet. It was acidized and flowd 339 bbls. of oil in two hours, with 8,400,000 feet of gas. It later flowed 1,847 bbls. of oil in 12 hours, with 10,200,000 feet of gas; and then flowed 1,000 bbls. in four hours with about 10,000,000 feet of gas. It was to be shot.



Area in northwestern Hughes County, Oklahoma, where a producer north of the Buckner pool recently was completed and where Blackwell Oil & Gas Co. No. 1 Long, wildcat, is drilling

(Mid-Continent Map Co., Tulsa, Okla.)

Pontotoc County

Nine new producers in the Fitts field and one failure in the Allen area were Pontotoc County's contribution to the Oklahoma list of completions during the week. Sinclair Prairie Oil Co. No. 5 Burris, NW cor. section 27-2-7, made largest potential of the new wells with 4,158 bbls. of oil daily. After acidizing with 10,000 gallons, it flowed 638 bbls. in 25 minutes through casing and 149 bbls. in 45 minutes through tubing. Gas gauged 3,800,000 feet. Production was from Viola lime topped at 3,855 feet, and Bromide topped at 4,090 feet; total depth, 4,303 feet. Same operators' No. 4 Burris, SE NW NW section 27-2-7, was treated with 5,000 gallons of acid and then with 10,000 gallons, and made potential of 3,260 bbls. of oil. It flowed 34 bbls. in two hours through tubing, 549 bbls. in 40 minutes through casing, and 160 bbls. in 45 minutes through tubing. Viola lime was topped at 3,840 feet; Bromide, 4,085 feet; McLish, 4,297 feet; total depth, 4,400 feet.

Skelly Oil Co. No. 10 Park College, NE NW NE section 28-2-7, was completed as a produced from Viola lime topped at 3,813 feet, and Bromide

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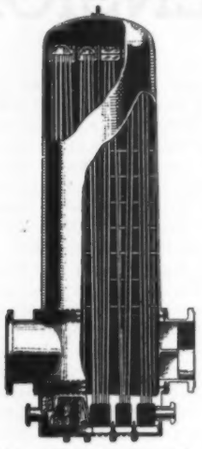

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topped at 4,085 feet, and McLish topped at 4,295 feet. Total depth was 4,310 feet. It flowed 239 bbls. the first hour through tubing, 209 bbls. the second hour through tubing, and made potential of 4,000 bbls. Gas gauged 3,000,000 feet. H. L. Blackstock and others No. 2 Daniles, NW SE SW section 21-2-7, made potential of 3,935 bbls. of oil and was completed at 4,360 feet, total depth. After acidizing, it flowed 605 bbls. of oil gross in five hours through tubing, and then was treated with 10,000 gallons and made potential. Top of Viola lime was 4,038 feet; Bromide, 4,320 feet.

Magnolia Petroleum Co. No. 6 Burris "A," NE SW NW section 27-2-7, topped Viola lime at 3,769 feet; Bromide, 4,045 feet; McLish, 4,230 feet; and was completed at 4,303 feet, total depth. After acidizing with 8,000 gallons, it flowed 631 bbls. the first hour through casing and 175 bbls. the next hour through tubing. It made potential of 3,751 bbls., with 2,437,000 feet of gas. Same operator's No. 1 Woolley, NW NE NE section 28-2-7, was completed at 4,300 feet, total depth, after acidizing and making potential of 3,448 bbls. of oil. It flowed 568 bbls. the first hour through casing and 139 bbls. the second hour through tubing. Top of Viola lime was 3,837 feet; Bromide, 4,100 feet. The company's No. 7 Simpson, SW NE NE section 29-2-7, topped Viola at 3,850 feet; Bromide, 4,140 feet, and was completed at 4,325 feet, total depth. After acidizing, it flowed 682 bbls. in two hours and made potential of 2,880 bbls.

E. H. Moore and others No. 10 Schauers, SE NW NW section 29-2-7, made potential of 2,315 bbls. of oil and was completed at 4,257 feet, total depth. Production was from Viola, topped at 3,805 feet, and Bromide, topped at 4,095 feet. Same operator's No. 16 Schauers, NE NE NW section 29-2-7, was completed as a Hunton lime producer, with initial production estimated at 2,000 bbls. daily. Top of Hunton was 3,472 feet; total depth, 3,765 feet.

Morris & Kimbell No. 3 Call, NW SW NW section 22-5-8, in the Allen area, encountered sand at 758 feet but was dry and abandoned at 772 feet, total depth.

New Operations

The following new work was reported in Pontotoc County: Continental Oil Co. No. 1 D. Brown, NE SE NE section 11-1-7, cellar; same operator's No. 2 House, NE NW SE section 12-1-7, cellar and pits; the company's No. 4 McCarty, SE NE NW section 12-1-7, location; same operator's No. 4 Simpson, SE SW NE section 12-1-7, cellar and pits; Magnolia Petroleum Co. No. 2 Norris, NW SW SE section 18-2-7, rigging up rotary; Mid-Continent Petroleum Corp. No. 3 McKoy, SW cor. section 20-2-7, rig on ground; Stahl Petroleum Co. No. 3-B Dennis, SW SE SW section 21-2-7, cellar and pits; Sinclair Prairie Oil Co. No. 1 Woolley, SW cor. section 22-2-7, cellar and pits; Samedan Oil Co. No. 3-A Holkum, SE SW NE section 27-2-7, set 12½-inch casing at 460 feet, total depth; Sinclair Prairie Oil Co. No. 7 Burris, SW NE NW section 27-2-7, location; same operators No. 8 Burris, SW NW NW section 27-2-7, location; Skelly Oil Co. No. 13 Park College, NW NW NE section 28-2-7, location; E. H. Moore and others No. 16-A Schauers, NE NE NW section 29-2-7, cellar and pits; Deep Rock Oil Corp. No. 6 Harden, NE SE NE section 30-2-7, location.

Continental Oil Co. No. 1 House, NW NW SE section 12-1-7, in the Jesse area, had sand at 4,659 to 4,680 feet. It flowed 872 bbls. of oil in three hours through casing and 1,240 bbls. in seven hours while drilling from 4,728 to 4,738 feet. It was bottomed at 4,738 feet, and the crew was preparing to shoot.

In the Fitts area, Fleetborn Oil Corp. No. 3 Morin, SE SW SE section 20-2-7, flowed 189 bbls. of oil through casing in 55 minutes after acidizing. Top of Bromide was 4,190 feet; total depth, 4,305 feet. Stahl Petroleum Co. No. 3 Dennis, SW SE SW section 21-2-7, flowed 240 bbls. in one-half hour through casing after acidizing. It topped Bromide at 4,195 feet; total depth, 4,335 feet. Blackstock & Deaner No. 1-A Moody, NE cor. section 27-2-7, was treated with 10,000 gallons of acid and flowed 353 bbls. through casing in the first hour and 160 bbls. through tubing in the next two hours, and was shut in. Hunton lime was topped at 3,396 feet; total depth, 3,751 feet. E. H. Moore and others No. 5-A Harper, SW NW NE section 29-2-7, topped Bromide at 4,130 feet; first sand, 4,220 feet; and at 4,340 feet it flowed 574 bbls. of oil in one hour, with 7,700,000 feet of gas. Same operators' No. 6 Schauers, SW SE NW section 29-2-7, was shut in after flowing 520 bbls. in one and one-half hours. McLish was topped at 4,250 feet; total depth, 4,350 feet.

Seminole County

Five producers were completed in Seminole County, the largest being the Carter Oil Co. No. 2 Parsons, C W half NW SW section 14-10-6, in the South Keokuk area. The well was given potential rating of 1,202 bbls. of oil daily. It topped Misener sand at 4,232 feet; Hunton lime, 4,245 feet; drilled to total depth of 4,246 feet and flowed 416 bbls. in nine and one-half hours.

Blackwell Oil & Gas Co. No. 3 Harjo, NW SW SE section 12-5-7, swabbed 314 bbls. in 48 hours and was completed after plugging back to 4,415 feet from 4,429 feet, total depth where water intruded. It was treated with acid and shot. Hunton lime, the producing formation, was topped at 4,115 feet. Uscan Oil Co. No. 2 Oliver, NE SE NE SW section 28-9-6, was shot with 30 quarts and swabbed 299 bbls. in 24 hours and pumped 300 bbls. in 24 hours, completed. Wilcox sand was topped at 4,146 feet; total depth, 4,160 feet. The Texas Co. No. 3 Steward, SE SW NE section 19-9-7, had top of Cromwell sand at 3,480 feet and was completed at 3,495 feet, total depth. It swabbed 105 bbls. in 14 hours and flowed 85 bbls. in 24 hours through tubing. Deep Rock Oil Corp. No. 3 Hagler, SW NW NE section 19-9-7, flowed 870 bbls. in 24 hours through casing, cutting 10 per cent water, and flowed 282 bbls. of oil and 45 bbls. of water through tubing in 12 hours, completed. Production was from Gilcrease sand topped at 3,433 feet; total depth, 3,443 feet.

New Seminole County work: Foster and others No. 1 Central Commercial Life Insurance Co., SE NW SW section 2-6-6, set 10-inch casing at 22 feet; Fleetborn Oil Corp. No. 2 Cahill, C S half NW NE section 7-6-8, rig; Mid-Continent Petroleum Corp. No. 4 Z. Bruner, NE SE SE section 11-7-6, an old well deepening, drilling at 4,361 feet; Ross Oil Co. and others No. 1-A Davis, NW SW NW section 16-9-7, spudded; Deep Rock Oil Corp. and others No. 3 Hagler, NW SE NE section 19-9-7, location; same operators' No. 4 Hagler, SW NE NE section 19-9-7, location; Creekmore-Wolf, Inc., No. 1 J. D. Campbell, SW NW NW section 20-9-7, building rig; Wood Oil Co. No. 2 Templeton, NE SE SW section 28-9-6, rig; Carter Oil Co. and others No. 1 Harris, C W half NW NE section 11-10-6, rig.

Estimated Production

Estimated daily average production of Oklahoma for the week ending May 23 and for the preceding week is as follows:

	Barrels	
	May 23	May 16
Allen	7,700	7,950
Asher-West Asher	800	800
Burbank	7,500	7,700
South Burbank	14,500	14,650
Balance Osage	23,500	23,750
Blackwell district	4,475	4,475
Bristow-Slick	8,500	8,425
Chandler	4,000	4,150
Crescent	5,550	5,650
Cromwell	3,800	3,750
Cushing-Shamrock	11,750	11,500
Duncan district	4,125	4,150
Edmond	12,500	12,625
Fish	9,825	10,125
Fitts	56,225	43,025
Gray	1,650	1,525
Graham	4,125	4,150
Healdton	9,175	9,150
Hewitt	4,475	4,450
Holdenville	1,075	1,075
Keokuk	5,500	7,000
Konawa	1,825	1,725
Lucien	13,750	13,650
Marshall-Lovell	975	975
Oklahoma City	141,825	155,400
Olympic	7,750	7,325
Papoose	1,075	1,125
Polo	3,600	3,250
Sasakwa and townsite	4,100	4,100
Sholem-Alechem	3,675	3,650
Seminole field:		
Bowlegs	13,575	13,725
Carr City	7,225	7,425
Earlsboro	7,400	7,550
South Earlsboro	950	825
East Earlsboro	11,050	11,425
Little River	13,700	13,300
East Little River	1,300	1,250
Maud	925	900
Mission	2,550	2,600
Seminole	10,950	11,050
East Seminole	3,425	3,075
Searight	5,675	5,950
Total Seminole	78,725	79,075
St. Louis-Pearson	25,175	26,150
Tatums	3,525	3,550
Tonkawa-Garber-Thomas	5,500	5,500
Wewoka	3,900	3,875
Yale-Jennings	4,025	4,100
Other pools	58,500	57,000
Total Oklahoma	558,675	560,525

Okfuskee County

Another Senora sand producer was completed in the Okfuskee County extension of the Olympic pool. It was the Sinclair Prairie Oil Co. No. 1 Carolina, SW NW SW section 31-10-9, which flowed 105 bbls. of oil in 12 hours after a shot with 20 quarts. Top of Senora sand was 1,730 feet; total depth, 1,754 feet.

Snyder Drilling Co. No. 7 Wind, NW NW SW NE section 35-11-9, in the Okemah area, had sand at 1,450-65 feet, total depth, and was completed. It was shot with 30 quarts and pumped 15 bbls. of oil in 24 hours.

New work in Okfuskee County follows: Blackwell Oil & Gas Co. and others No. 1 Dalton, SE SE NE section 36-10-8, cellar and pits; Olean No. 3 Douglas, SE NE NW section 36-10-11, an old well, rigging up to deepen; Panther Oil Co. No. 4-A Smith, C N half NE NE section 11-11-11, drilling at 890 feet; Pure Oil Co. No. 1 Rentic, SE SE NW NE section 26-12-11, an old well being deepened, drilling at 2,965 feet; F. R. Dyer No. 1-A Foster, SE SW SW section 4-13-10, rigging up; C. M. Vincent No. 1 Randell, NE SW NE section 13-13-10, location; R. C. Vincent and others No. 2 Hackensmith, NE NE SE section 13-13-10, moving in tools; same operators' No. 1 Musk-

grove, SE SE NE section 13-13-10, drilling at 1,220 feet.

Manahan Oil Co. No. 6 Dalton, NE SE SE section 36-10-8, in the Olympic sector, was bottomed at 1,753 feet, and flowed 170 bbls. of oil, but had not been completed.

Hughes County

Field work in Hughes County largely was routine, only two producers being completed in the Olympic pool and one dry hole in the Papoose area. Mid-Continent Petroleum Corp. No. 6 Hampton, NE SW NE section 1-9-8, topped Senora sand at 1,661 feet, was bottomed at 1,725 feet, and after a shot with 60 quarts flowed 200 bbls. of oil through tubing in 12 hours, completed. George Manahan and others No. 7 Oliphant "C," NE NW SW section 1-9-8, was shot with 60 quarts and flowed 250 bbls. of oil and 15 bbls. of water in 24 hours, completed. It topped Senora sand at 1,680 feet; total depth, 1,719 feet.

Kingwood Oil Co. and Phillips Petroleum Co. No. 7 Rogers, C E half SW SW section 3-9-9, an old Papoose area well that was deepened from 1,096 feet to 1,117 feet, total depth, encountered water, and was dry and abandoned.

The only new work in Hughes County was in the Olympic area. George Manahan and others No. 5 Oliphant "E," SE SW NW section 1-9-8, was drilling at 1,400 feet; same operator's No. 2 Oliphant "D," NE SE SW section 12-9-8, set 10-inch casing at 36 feet and was waiting.

J. A. Chapman No. 2 fee, NE NE NW section 1-9-8, may define the northwest edge of the Olympic pool. It was bottomed at 1,703 feet in Senora sand, and produced 150 bbls. of oil and 225 bbls. of water.

Pawnee County

Peter Adamson, Jr., No. 3 Parker, SW SE SE section 24-21-7, an old well in the Cleveland area of Pawnee County, was deepened to Arbuckle lime at 2,781-2,797 feet, total depth, and completed. It pumped 30 bbls. of oil the first day, and 6 bbls. the second day.

Osage County

Carter Oil Co. and others No. 4 McKinley, NE NW SW section 35-26-6, in the South Burbank area of Osage County, had Bartlesville sand at 2,804 to 2,902 feet and was completed at 2,907 feet, total depth. It flowed 496 bbls. of oil in 19 hours, and potential was estimated at 775 bbls. Gas gauged 1,043,000 feet. Midco Oil Co. No. 1 Osage, SE SW SW section 22-26-6, was dry and abandoned at 3,119 feet, total depth, in Mississippi lime. It had dry Bartlesville sand at 2,920-95 feet; chat, 3,017-36 feet; lime, 3,036 feet.

In the Naval Reserve area, Lewis Production Co. and Continental Oil Co. No. 9 Ah-Kah-Me, NE NE SE section 9-24-7, was shot with 60 quarts and flowed 331 bbls. in 24 hours, completed. Production was from Bartlesville sand, topped at 2,510 feet. It was drilled to 2,588 feet, total depth, and plugged back to 2,584 feet. Peters Petroleum Co. and Sinclair Prairie Oil Co. No. 12 Osage, NW SW NE section 24-24-7, pumped 20 bbls. of oil and 27 bbls. of water and was completed at 712 feet, total depth. Sand was topped at 675 feet. Lewis Production Co., Continental Oil Co. and Texas Co. No. 1 Parker, SW SW NW section 10-24-7, was dry and abandoned at 2,680 feet, total depth. Dry Bartlesville sand was topped at 2,528 feet; chat, 2,648 feet; Mississippi lime, 2,679 feet.

Only two new operations in Osage County were reported. J. H. Alexander and others No. 6 Osage, NW NW SW section 36-25-11, was a location. Grimes & Gillespie No. 5 Osage, NW NW SW section 30-21-12, an old well, was preparing to deepen.

Logan County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 3 Pfeiffer, C S half SE SW section 33-20-2w, in the Logan County extension of the Lucien field, topped first Wilcox sand at 4,870 feet; second sand, 4,947 feet; total depth, 5,085 feet, completed. It flowed 776 bbls. of oil in three hours and made potential of 5,422 bbls. Gas gauged 4,750,000 feet.

Blackwell Oil & Gas Co. 1 Rigdon, NW cor. section 28-18-4w, the only new test in Logan County, was a location.

Cleveland County

Gulf Oil Corp. No. 1 James, NW NW SW section 27-10-2w, in the Moore area of Cleveland County, was building rig.

Sinclair Prairie Oil Co. and others No. 1 Franklin, SE NW SE section 21-10-2w, discovery well in the Moore area, was deepened from 7,269 feet to 7,318 feet, still in Wilcox sand, and produced an estimated 1,100 bbls. of oil an hour. Gas gauged 80,000,000 feet. It was completed last June, with gas production estimated as high as 300,000,000 feet. It also produced about 2,000 bbls. of "gasoline" daily. Operators have been using the gas for repressuring in the Oklahoma City field. There are two other producers in the field and five locations and drilling wells.

Pottawatomie County

The only Pottawatomie County completion was in the Shawnee pool. Gulf Oil Corp. No. 1 Gunter, NW SE SW section 32-11-4, topped Earlsboro sand at 4,386 feet; total depth, 4,472 feet. It was shot with 15 quarts and flowed 113 bbls. in 24 hours; shot again with 45 quarts, and flowed 77 bbls. of oil in 13 hours. No new work was reported.

Carter County

In the Wildcat Jim area of Carter County, Samedan Oil No. 3 Eaves, C W half SE SW NE section 6-2s-2w, produced 125 bbls. of oil in 24 hours and was completed at 2,203 feet, total depth. It had several sand series, first top being reported at 1,513 feet.

In the Healdton field, Shell Petroleum Corp. No. 68 Wirt Franklin, NW NE NE section 8-4s-3w, pumped 32 bbls. of oil in 24 hours and was completed at 1,157 feet, total depth. First sand was topped at 971 feet. Sinclair Prairie Oil Co. No. 7 Apple-Franklin, SW SW NW section 9-4s-3w, pumped 25 bbls. of oil in 24 hours and was completed at 1,083 feet, total depth. Sands were topped at 913, 1,040, 1,062 and 1,072 feet.

New work in Carter County follows: McMinn and others No. 1 H. D. Tussy, NE SE NW section 6-1s-3w, rigging up rotary; Cox & Hamon No. 2 Wilson, NW NE NW NW section 9-2s-2w, drilling at 980 feet; Louis Sikes No. 2 Byrd, NE SW SW section 4-2s-2w, drilling at 60 feet.

Creek County

No new producers were completed in Creek County, but one old well was deepened. It was Sinclair Prairie Oil Co. No. 6 Watson, SW NE NE

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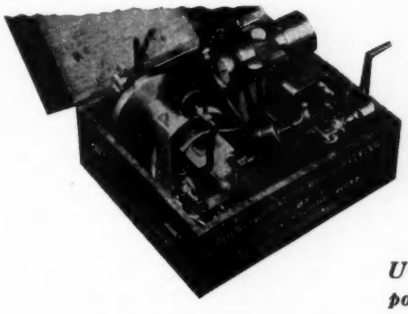

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section 15-14-8, which was shot and pumped 20 bbls. of oil in 24 hours. It was deepened from 3,217 feet to 3,815 feet and plugged back to 3,811 feet.

The only new operation in Creek County was the Bert Swift No. 4 King, SE NW SW section 7-18-10. It was drilling below 1,015 feet.

Tulsa County

Johnson Oil Refining Co. No. 1 Bailey & Holme, NE NW NE section 31-19-10, in the Keystone area of Tulsa County, had sand at 2,218 to 2,258 feet, produced 136 bbls. of oil in 24 hours and was completed. Same operators' No. 1 Stibbins, NE SW SE section 30-19-10, pumped 18 bbls. of oil in 24 hours and was completed at 2,261 feet, total depth. It had sand at 2,234-57 feet.

The only new Tulsa County test was the Johnson Oil Refining Co. No. 2 Stibbins, SE SW SE section 30-19-10, spudded.

Okmulgee County

The following new work in Okmulgee County was reported: Aggis Drilling Co. No. 4-A McKinney, CWL NW SW section 16-15-14, drilling at 300 feet; Simmons & Gordon No. 4 Bradford, CSL SE SW section 19-14-14, an old well rigging up to deepen.

Marshall County

The only Marshall County completion was a failure. It was the G. M. Felts No. 6 fee, SE NW NW section 6-8s-6, had dry sand at 522-42 feet, total depth, and was abandoned.

Two new Marshall County tests were reported. Kingston Oil & Gas Co. No. 4 Felts, SW NW NE NW section 6-8s-6, was rigging up machine. Levelle Coal Co. No. 6 Brint, NE NW SE section 1-8s-5, was a location.

Johnston County

Magnolia Petroleum Co. No. 1 Green, NE cor. section 12-2s-7, wildcat in Johnston county, was dry and abandoned at 2,615 feet, total depth. Formation tops follow: Mayes, 750 feet; Woodford, 850 feet; Hunton lime, 1,138 feet; Sylvan, 1,395 feet; Viola, 1,547 feet; Bromide, 1,932 feet; McLish, 2,245 feet; Wilcox sand, 2,530 feet. Moore & Wirick No. 1 Westheimer & Daube, SE NW NE section 19-3s4, another wildcat, was dry and abandoned at 4,065 feet, total depth, in Caney shale. It drilled in shale most of the way.

Atoka County

Prairie Investment Co. No. 1 A. Cobb, SW NE NW section 19-3s-11, wildcat southwest of Atoka in Atoka County, was rigging up machine for a 2,500-foot test. D. Malarnee and others No. 2-A DOK Ranch, SE cor. section 35-2s-13, an old Atoka County wildcat being deepened, was drilling at 3,230 feet.

Pittsburg County

Choctaw Oil & Gas Co. No. 2 Bunyard, SW SW NE section 18-7-18, in the Quinton area of Pittsburg County, was building rig.

Southwestern Oklahoma

Routine operations prevailed in southwestern Oklahoma, no wells being completed and only three new operations were reported. In Stephens County, L. A. Wilkins and others No. 10 W. B. Crump, NE SE SW section 10-2s-5w, was digging pits. In Grady County, John Graham and others No. 1 Castleberry, SW SE NW section 8-5-7w, a wildcat northeast of the Chickasha gas field, was moving in tools. Geology for this test was by Clyde Becker. In Cotton County, J. C. Davis No. 1-A Anderson, SW SE SW section 23-1s-10w, was building derrick.

La.-Ark. Fields

(Continued from Page 66)

miles southwest. The American Liberty extension producer was officially completed for 96 bbls. of oil per day flowing through a quarter-inch tubing choke from saturation topped at 5,991 feet. The hole is bottomed at 6,010 feet. The No. 1 Rambo extension is in the J. H. Rives Survey.

The Cass County side of the Rodessa pool now contains 9 oil and distillate producers and 16 active drilling operations, half of which are drilling below 4,000 feet.

United Curtails

For the first time in several weeks, United Gas Public Service Co., the largest acreage owner and producer in the Rodessa pool, failed to launch a single new test. It was reported that the company's Shreveport office has received instructions to curtail its drilling program, probably until disquieting conditions are finally settled one way or another.

The Caddo Parish, Louisiana, side of the Rodessa pool continues to set the pace for new development, but on a somewhat diminished scale as compared to the drilling campaign existing since discovery 10 months ago. Eight new operations were announced last week for the Caddo Parish portion of the Rodessa pool. There were seven new oil producers finished on the Louisiana side of the pool last week, one of which required acid treatment to stimulate output and three were officially finished in Cass County.

One deep wildcat failure was registered in Lafayette County, Arkansas, by Joe Modisette whose No. 1 Red River Lumber Co., in the C SW SW section 21-19-24, was abandoned at 6,009 feet without logging showings of oil or gas.

The Permian lime pay horizon developed by Phillips Petroleum Co. in one well on the northeast flanks of the Smackover field in Ouachita County, Arkansas, attracted four new operations during the past week. Two of the new tests were announced by Phillips and the others were by Edgar Johnson and others and by John Pugh. One wildcat test was listed in the southwestern part of Lafayette County by A. M. Neeley of St. Louis.

Caddo Parish, Louisiana

Calatex Oil & Gas Co. No. 1 Hudson, 2,492 feet north and 660 feet east from the SW cor. section 8-16-16, was junked and abandoned at 3,202 feet where stuck drill stem could not be freed.

Danciger Oil Refineries, Inc., No. 1 J. F. Nugent, C Lot 3, Block 12, section 23-23-16, gauged 6 bbls. per hour through three-sixteenths inch tubing choke through casing perforations at 5,980 feet to 5,897 feet. Saturation was topped at 5,982 feet and the hole was carried to 6,018 feet.

O'Brien Brothers No. 3 Rodessa Oil & Land Co., C SW NW SW section 14-23-16, flowed 84 bbls. per hour through three-eighths inch tubing choke with 600 pounds tubing pressure and 100 pounds on casing. Saturation was topped at 5,990 feet and the hole completed at 6,010 feet.

Phillips Petroleum Co. No. 4 Norton, 990 feet east and 650 feet north of the SW cor. SW NW section 17-23-15, gauged 18 bbls. per hour through quarter-inch tubing choke against 650 pounds pressure on tubing and 450 pounds on casing. The well topped saturation at 6,038 feet and was carried to 6,068 feet.

Standard Oil Co. of Louisiana and Gulf Refining Co. No. 14 Lawton, 330 feet north and 990 feet east from the SW cor. NW SW section 14-23-16, flowed 157 bbls. per hour through 1¾-inch tubing choke against 500 pounds on tubing and 800 pounds on casing. The well topped Young pay at 5,991 feet and was completed at 6,013 feet.

United Gas Public Service Co. No. 1 Maroun-Lindsay, C NW NW NW section 24-23-16, gauged 30 bbls. of oil per hour through three-eighths inch tubing choke after pay from 6,605-38 feet was treated with 2,000 gallons of acid. Tubing pressure was 425 pounds and casing pressure was 575 pounds. United Gas Public Service Co. No. 3 Miller, 330 feet north and east from the SW cor. NW NW section 14-23-16, was completed flowing 37 bbls. per hour through half-inch tubing choke, 6 per cent salt water. The well topped saturation at 7,999 feet and was completed at 6,008 feet.

United Gas Public Service Co. No. 21 Rodessa Oil & Land Co., C NE SE NE section 15-23-16, flowed 21 bbls. of oil per hour through quarter-inch tubing choke. Top of saturated pay was logged at 5,960 feet and the hole was bottomed at 5,998 feet.

Cass County, Texas

American Liberty Oil Co. No. 2 Maxie, 990 feet west and 330 feet south from the northeast corner of the Maxie lease in the John Collum Survey, gauged 20 bbls. per hour through half-inch tubing choke. Top of saturation was logged at 6,015 feet and the hole is bottomed at 6,045 feet.

American Liberty No. 3 Maxie, 1,650 feet west and 330 feet north from the southeast corner of 86 acres in the John Collum Survey, gauged 20 bbls. per hour through half-inch tubing choke from total depth of 6,044 feet. The well topped saturation at 6,017 feet. American Liberty No. 1 Marcus Rambo, 300 feet south and east from the northwest corner of 92 acres in the J. H. Rives Survey, gauged 96 bbls. per day through quarter-inch tubing choke with 1,100 pounds on casing and 965 pounds on tubing. The well topped saturation at 5,991 feet and was completed at 6,010 feet. Since official completion, production has ranged up to 120 bbls. per day through quarter-inch tubing choke.

LaSalle Parish, Louisiana

H. T. Taylor No. 7 fee, SW cor. SW SE section 19-10-2e, completed at 1,580 feet pumping 100 bbls. of fluid per day, 50 per cent water.

Sabine Parish, Louisiana

J. J. Watson No. 1 Reneau, NW cor. SE SW section 29-9-13, was completed pumping 10 bbls. of oil per day at 1,767 feet, total depth.

Union Parish, Louisiana

United Carbon Co. No. 3 Stovall, 2,360 feet east and 627 feet south of the NW cor. section 33-21-4e, gauged 12,000,000 feet of gas and registered 838 pounds rock pressure from the Monroe field pay drilled to 2,125 feet.

Lafayette County, Arkansas

W. H. Harvey No. 1 R. F. Allen, C NE SE SE section 13-19-25, is an abandoned derrick and location.

Joe Modisette No. 1 Red River Lumber Co., C SW SW section 21-19-24, has been abandoned at 6,009 feet. The wildcat failure logged base of massive anhydrite at 5,260 feet with elevation of 254 feet. Top of broken anhydrite was 4,924 feet and top of massive anhydrite was 5,100 feet. Lime with a few sandy phases was drilled and cored from base of the anhydrite to total depth.

Miller County, Arkansas

J. W. Jones and others No. 1 J. H. Bush, in section 2-19-27, is an abandoned location.

McAllester Fuel Oil Co. No. 1 J. N. Cook, in section 18-20-27, is also an abandoned location.

Pulaski County, Arkansas

Base Line Oil Co. No. 1 Wilson, in the SW cor. NE SE section 28-1s-11w, has been abandoned at 123 feet.

Union County, Arkansas

Root Petroleum Co. No. 1 E. V. White, C SE SW section 36-17-15, is abandoned at 2,246 feet after testing a slight showing of gas at that depth.

Central West Fields

(Continued from Page 60)

Hannon, section 8, Mohican Township. Ohio Fuel Gas Co. has a location for No. 1 on the Eliz Young farm, section 22, same township.

In Lorain County, the Ohio Fuel Gas Co. No. 1 A. S. Gibson, Lot 80, Columbia Township, is a gas well, and the same company is starting No. 1 William E. Roth, Lot 82, same county.

In Holmes County, Ohio Fuel Gas Co. No. 1 Moses on the Moses S. Miller farm, Lot 29, Pint Township, Lot 34, is a gas well. Ohio Fuel Gas Co. has a rig in for a test on the Thomas L. Hughes farm, Lot 34, Ripley Township, same county.

In Coshocton County, M. O. Waltz No. 11 Jesse Lawrence, Lot 4, Clark Township, produced 3 bbls. of oil at a depth of 810 feet, which is the Berea sand.

In Summitt County, the East Ohio Gas Co. No. 1 on the M. Krasinski farm, section 19, Greene Township, is a gas well at a depth of 4,029 feet, and the same company is drilling a test on the Rosa Lamb farm, section 17, same township and county.

INDIANA FIELD

In Perry County, Indiana, Nollem Oil & Gas Corp. No. 1 on the Martha Hennen estate, NW SE section 8, Anderson Township, is a gas well at 491 feet. No. 2 on the same farm, is drilling. Charles Dice found a 20-bbl. oil well on the Charles Kurtz farm, which produced in the Jackson sand and will bring about more activity in that area.

KENTUCKY FIELDS

Some fairly nice wells are being found in Kentucky, especially in Ohio and McLean Counties. In Ohio County, the Kentucky Natural Gas Co. completed a shallow producer with an initial production of 90 bbls. W. E. Hupp and others No. 2 on the J. T. Westerfield farm, produced 45 bbls. Teller & Co. No. 2 on the G. H. Medcalf farm, in the Maddox pool, produced 20 bbls. initially. Penn-Indiana Oil Co. No. 2 on the Lanham heirs farm, same pool, produced 8 bbls. Ekis & Co. No. 2 on the Richards heirs farm, was dry.

Rocky Mountain Area

EASTERN COLORADO ASSURED OF TEST TO PENNSYLVANIAN

By
T. R. INGRAM

DENVER, Colo., May 25.—Another deep test to 8,000 feet in eastern Colorado was assured this week when Harvey V. Elwell, of Wichita, Kans., closed a deal on the Flagler block in Kit Carson County. Two locations were released on the Ilo and Powder Wash structures in Moffat County by the Texas Co. and the Mountain Fuel Supply Co. South Park Oil Co.'s discovery well in the Hartsel district again flowed when drilled deeper. Carter Oil Co. has purchased an undivided half-interest in a 33,000-acre block in Washington County which will be tested this summer.

The Wyoming land commissioners are preparing to issue new regulations for leasing state lands for oil and gas. The Ohio Oil Co. No. 4 Byron Union, on the Byron dome, Big Horn County, proved to be a small well. Same company No. 1 Dixon, at Rock River, proved to be the best Sundance well so far completed in that field and swabbed 1,045 bbls. first 24 hours. Same company No. 3 Rohlff, in Lance Creek, which marks an extension one location north, is flowing 175 bbls. per day.

The Montana-Dakota Utilities Co. discovery well in Fallon County, Montana, was given a test and while it was inconclusive, it promises to make a commercial well. Cut Bank had a surprise when the most northerly well in the field came in as a big gasser above the objective sand. Two wells were completed and five new operations got under way. A gas well was completed in the Devon district in Toole County and one completion and two new operations were reported in Kevin-Sunburst.

A commercial well at a shallow depth was completed in the Hoh River basin in the state of Washington.

NEW MEXICO

Lea County

The largest of eight new producers in the Monument, Lea County, New Mexico, field was the Texas Co. No. 2 Phillips, NE NE NW section 6-20-37, which flowed 3,936 bbls. naturally through tubing choke in 24 hours. Gas gauged 4,750,000 feet. It had oil pay at 3,824-90 feet, total depth. Packer was set at 3,826 feet. Same operator's No. 2 Mattern, C SW SW section 20-19-37, was completed at 3,942 feet, total depth, in oil pay topped at 3,842 feet. It flowed 840 bbls. of oil natural through tubing and from below packer, and produced 1,370,000 feet of gas.

Tide Water Oil Co. No. 1 State "F," C NW NW section 20-19-37, flowed 1,488 bbls. through 1-inch tubing choke in the first 24 hours after acidizing and was completed at 3,973 feet, total depth. Oil pay was topped at 3,915 feet. Amerada Petroleum Corp. No. 1 State "P," C NW SW section 29-19-37, had oil pay at 3,856-3,930 feet, total depth, and was completed. After acidizing two times, it flowed 768 bbls. through 1-inch tubing choke in 24 hours, with 453,000 feet of gas. Same operator's No. 2 Phillips, C SE NE section 1-20-36, flowed 648 bbls. natural through 1-inch tubing choke in 24 hours. Gas measured 373,000 feet. It had oil pay at 3,800-90 feet, total depth.

Gulf Oil Corp. No. 2 Luthy, C NW NW section 29-19-37, flowed 1,632 bbls. of oil naturally in 24 hours from pay at 3,800-3,950 feet, total depth. It produced 1,124,000 feet of gas. Continental Oil Co. No. 2-C-30 State, C NW NW section 30-19-37, had a natural flow of 912 bbls. in 24 hours, with 2,060,000 feet of gas. It was bottomed in oil pay at 3,897-3,975 feet. Amerada Petroleum Corp. No. 2 State "H," C NW SE section 1-20-36, was completed in pay at 3,838-79 feet, total depth. After acid treatment, it flowed 888 bbls. of oil through 1-inch tubing choke in 24 hours, with 355,000 feet of gas.

In the Eunice area, Lea County, Humble Oil & Refining Co. completed No. 4 Adkins, C NW SW section 10-21-36, at 3,867 feet, total depth, in pay topped at 3,814 feet. It flowed 1,128 bbls. of oil natural through three-fourths inch tubing choke. Gas measured 692,000 feet. Gulf Oil Corp. No. 5 Arnott-Ramsey "C," C SE SW section 21-21-36, was acidized and flowed 693 bbls. of oil and 55 bbls. of water through tubing in the first 24 hours. It produced 950,000 feet of gas. Oil pay was had at 3,790-3,890 feet. Continental Oil Co. No. 4-A-18 Meyer, C SW NE section 18-21-36, flowed 600 bbls. of oil natural through tubing and was completed in oil pay at 3,819-3,931 feet, total depth. Volume of gas was 2,890,000 feet daily.

A wildcat east of the Eunice pool, Sun Oil Co. No. 1 W. W. Weatherly, C NE SW section 17-21-37, flowed 126 bbls. of oil through tubing in the first 24 hours after acid treatment and was completed. Top of oil pay was 3,725 feet; total depth, 3,815 feet. It had several shows of oil and gas and before acidizing it swabbed at the rate of 1 bbl. an hour.

In the Jackson area of Eddy County, Ohio Oil Co. completed No. 1 State-McCullough, SE SW SW section 16-17-30. In the first 24 hours after acid treatment, it flowed 672 bbls. of oil and gas volume was estimated at between 2,000,000 and 3,000,000 feet. Oil pay was found at 2,590-3,149 feet, total depth.

Hobbs Area

Shell Pet. Corp. No. 1 State "E," C E half SE SE sec. 14-18-37. T.D. 4,374 ft.; P.B. 4,178 ft.; shut down and may abandon.
Continental Oil Co. No. 3-B-13 State, C NE SW sec. 13-18-37. P.B. 3,886 ft.; to test Bowers.
National Securities Oil Corp. No. 1 Linam, NE SE SW sec. 33-18-37; wildcat. Old well plugging back from 4,238 to 4,228 ft.; swabbed sulfur water; no oil; shut down for orders.
Shell Petroleum Corp. No. 4 Sanger, SW SW NW sec. 27-18-39. Drlg. 3,267 ft.

Cooper Area

Plains Prod. Co. No. 1 R. L. Mosley, C NW SE sec. 34-24-37. T.D. 3,551 ft.; 900 ft. oil in hole in 8 hrs.; cleaning out; to shoot.
Southern Oil Corp. No. 1 Vaughan, C SW SE sec. 15-24-36. Drlg. 550 ft.
Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-36. Drlg. 3,177 ft.
Skelly Oil Co. No. 5 Coates, C NE SE sec. 3-24-36. Rig.

Sims Area

Samedan Oil Co. No. 1 Parks, 330 ft. from S and 400 ft. from W lines, SW¼ sec. 14-22-37. T.D. 3,678 ft.; swabbed and blowed 180 bbls. in 48 hrs.; preparing to deepen.
Continental Oil Co. No. 1-A-22 Elliott, C SW SW sec. 22-22-27. Drlg. 3,505 ft.
Skelly Oil Co. No. 1 Ella Simms, C NW SE sec. 3-23-27. Rig.
Penrose & Rowan No. 2 Cary, C NE SW sec. 22-22-37. T.D. 3,570 ft.; showing oil; tubing to test.
Sun Oil Co. No. 1 Richards, C NE SE sec. 6-23-37. T.D. 3,798 ft.; swabbing.
Humble Oil & Ref. Co. No. 1 W. B. Farrell, C SW SE sec. 22-22-37. Drlg. 1,830 ft.
Tide Water Oil Co. No. 1 A. Walden, C SE NE sec. 21-22-37. Drlg. 1,225 ft.
Magnolia Pet. Co. No. 1 Cary, C NE SE sec. 21-22-37. Drlg. 1,410 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,150 ft.; set 8¼-in. casing.
Continental Oil Co. No. 1-A-15 Elliott, SE SE SE sec. 15-22-37. Location.
Continental Oil Co. No. 1-A-21 Elliott, C SE SE sec. 21-22-37. Location.
Skelly Oil Co. No. 2 J. V. Baker, C NW NW sec. 27-22-37. Set surface pipe 220 ft.
Gulf Oil Corp. No. 1 F. C. King, C SW NW sec. 5-23-37. Bldg. rig.
Penrose & Rowan No. 4 Cary, C SW NW sec. 22-22-37. T.D. 1,146 ft.; set 8⅝-in. casing.

Chaves County

Tannehill No. 2 Campbell, C NE SE sec. 1-11-25. T.D. 1,400 ft.; straightreaming; to set 5-in. csg.
Comanche Drlg. Co. No. 2 Sloop & Purcell, C NE NE sec. 15-11-26. Drlg. 757 ft.

Monument Area

Anderson & Prichard Oil Corp. No. 1 Britt "A," C SE SW sec. 6-20-37. T.D. 3,906 ft.; flowed 25 B.P.H. from below packer set at 3,829 ft.; resetting packer at 3,831 ft.
Gulf Oil Corp. No. 1 A. B. Reeves, C NW SW sec. 29-20-37. Wildcat; T.D. 3,844 ft. in L.; acidized; swbg. and tstg.; producing some oil.
Gulf Oil Corp. No. 3 Graham-State "C," C SW NE sec. 24-29-36. T.D. 4,030 ft.; spray of oil; gas gauged 13,900,000 ft.; to acidize.
Sun Oil Co. No. 6 Weir, C NW NE sec. 35-19-36. Loc.
Amerada Pet. Corp. No. 1 State "R," C NE SW sec. 29-19-37. Drlg. 3,567 ft.
Amerada Pet. Corp. No. 2 State "O," C SW NE sec. 30-19-37. Drlg. 3,964 ft. in br. L.; prep. to test.
Amerada Pet. Corp. No. 1 Weir "B," C SW NE sec. 26-19-36. T.D. 4,030 ft.; C.O. and prep. tbg.
Skelly Oil Co. No. 2 State "D," C NE SE sec. 1-20-36. Drlg. 3,801 ft.
Texas Co. No. 4 State "E," C NE SW sec. 1-20-36. Drlg. 3,395 ft.
Ohio Oil Co. No. 2 State-Elliott, C NE SE sec. 30-19-37. T.D. 3,940 ft.; prep. to acidize.
Continental Oil Co. No. 2-A-6 Britt, C NW SW sec. 6-20-37. Drlg. 3,778 ft.
Fred Turner, Jr., No. 1 State "A," NE NW SW sec. 2-20-36. Drlg. 3,790 ft.
Texas Co. No. 3 Phillips, C SW NW sec. 6-20-37. Drlg. 3,055 ft.
Anderson-Prichard Oil Corp. No. 3 Britt, SE SW NE sec. 7-20-37. Rig.
Sun Oil Co. No. 1 State, C NE NE sec. 25-19-36. T.D. 2,577 ft.; set 9⅝-in. csg.
Anderson-Prichard Oil Corp. No. 1 State, C SW NW sec. 2-20-36. Drlg. 2,550 ft.
Amerada Pet. Corp. No. 3 State "O," C SE NE sec. 30-19-37. Drlg. 3,808 ft.
Continental Oil Co. No. 4 State "C," C SW NW sec. 30-19-37. Cellar and pits.
Continental Oil Co. No. 3 State "C," C SE NW sec. 30-19-37. Drlg. 3,885 ft.
Amerada Pet. Corp. No. 1 Lambert, NW NW NE sec. 6-20-37. T.D. 3,671 ft.; fsg. for drill pipe.
Amerada Pet. Corp. No. 1 State "S," C SE SW sec. 2-20-36. Drlg. 3,813 ft.
Gulf Oil Corp. No. 1 S. T. Burk, C NE NE sec. 28-19-37. Drlg. 3,850 ft.
Amerada Pet. Corp. No. 4 State "O," C NE NE sec. 30-19-37. Drlg. 3,107 ft.
Texas Co. No. 1 State "J," C NE SW sec. 24-19-36. Drlg. 2,980 ft.
Amerada Pet. Corp. No. 1 State "T," C SE SW sec. 25-19-36. Rig.
Shell Pet. Corp. No. 1 J. A. Foster, C SE SE sec. 34-19-36. Drlg. 2,939 ft.
Amerada Pet. Corp. No. 3 Phillips, C SW NE sec. 1-20-36. Spudded.
Amerada Pet. Corp. No. 3 State "D," C SE NW sec. 1-20-36. Rig.
Gulf Oil Corp. No. 4 Graham-State "C," C SW SE sec. 24-19-36. Drlg. 3,045 ft.
Gulf Oil Corp. No. 1 J. W. Smith, C SE NE sec. 24-19-33. Drlg. 3,430 ft.
Barnsdall Oil Co. No. 5 Cooper, C NE SE sec. 12-20-36. T.D. 2,401 ft.; set 9⅝-in. csg.
Gulf Oil Corp. No. 7 Culp, C NE NE sec. 19-19-37. T.D. 1,375 ft.; set 10¾-in. csg.
Gulf Oil Corp. No. 1 D. A. Williams, C NW SE sec. 29-19-37. Drlg. 1,380 ft.
Empire O. & R. Co. No. 2 State "E," SE SE SW sec. 30-19-37. Drlg. 2,500 ft.; drlg. plug.
Ohio Oil Co. No. 3 State-Elliott, SW SW SE sec. 30-19-37. T.D. 165 ft.; set 12½-in. csg.
Anderson-Prichard Oil Corp. No. 2 Britt "A," C NE SW sec. 6-20-37. Loc.
Skelly Oil Co. No. 1 State "E," C SE NE sec. 29-19-37. Rig.
Empire O. & R. Co. No. 3 State "E," C NW SW sec. 30-19-37. Drlg. 1,117 ft.
Continental Oil Co. No. 2-A-3 Reed, C SE NE sec. 3-20-36. R.U.R.
Texas Co. No. 1 State "K," C SE SE sec. 18-19-37. R.U.R.
Oilwell Drlg. Co. No. 2 State "A," C NW NE sec. 29-19-37. Rig.
Ohio Oil Co. No. 4 State-Elliott, C SE SE sec. 30-19-37. Cellar.
Anderson-Prichard Oil Corp. No. 4 Britt, NE NW NE sec. 7-20-37. Rig.
Amerada Pet. Corp. No. 2 State "K," C NE NW sec. 29-19-37. Loc.
Amerada Pet. Corp. No. 1 Sarah Phillips, SE SE SW sec. 33-19-37. Loc.
Gulf Oil Corp. No. 2 Mathews, C NW SE sec. 6-20-37. Cellar and pits.
Amerada Pet. Corp. No. 5 Weir, C SW NW sec. 35-19-36. Cellar.

Lea County—Miscellaneous

Culbertson-Irwin & Stovall No. 1 J. B. Humphreys, C SE SW sec. 3-25-37. T.D. 3,702 ft.; S.D. for orders; may shoot.
Plains Prod. Co. No. 1 George Smith, C SE SE sec. 4-25-37. T.D. 3,750 ft.; to complete as gasser.
Texas Co. and Repollo Oil Co. No. 1 Lanehart, C NE sec. 29-25-37. T.D. 2,770 ft.; gauged 100,000,000 ft. of gas; to drill under water pressure.
Maljamar O. & G. Co. No. 6 Baisch, C NW SE sec. 21-17-32. T.D. 4,129 ft.; P.B. 3,950 ft.; blowed 75 bbls. dly.; to reacidize.
Ohio Oil Co. No. 1 W. H. Turner, C NE SE sec. 29-31-37. Drlg. 3,550 ft.
Landreth Prod. Co. No. 1 J. W. Grizzell, C SE SW sec. 5-22-37. Drlg. 2,415 ft.
Rowan et al No. 1 Mattern, C SW SE sec. 7-22-37. Drlg. 2,600 ft.
C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37. Wildcat; drlg. 3,585 ft.
Gulf Oil Corp. No. 1 E. King, C SW NW sec. 28-21-37. Drlg. 3,008 ft.
Gulf Oil Corp. No. 1 W. T. McCommack, C NE NE sec. 32-21-37. Drlg. 2,795 ft.
Continental Oil Co. No. 1 J. C. Farney, C SW SE sec. 5-23-36. Wildcat. Loc.
Gulf Oil Corp. No. 1 S. J. Carr, C NW SW sec. 3-24-37. T.D. 900 ft.; fishing.
Gulf Oil Corp. No. 2 N. F. Humphreys, C NE NW sec. 25-25-36. Drlg. 3,110 ft.
Sun Oil Co. No. 1 Stuart, C NW NE sec. 15-25-37. T.D. 3,283 ft.; swbg. 40 B.P.D.
Continental Oil Co. No. 2-A-19 Eaves, C SW SW sec. 19-26-37. Rigging up rotary.
Gulf Oil Corp. No. 1 J. A. Stuart, C SW NE sec. 10-25-37. Drlg. 1,510 ft.
Gulf Oil Corp. No. 1 L. M. Buffington, C NW SW sec. 13-25-37. T.D. 1,012 ft.; recmtg. 10¾-in. csg.
Sun Oil Co. No. 1 Lanehart, C SE SE sec. 20-25-37. Drlg. 1,231 ft.
Humble O. & R. Co. No. 1 Lanehart, C NE SW sec. 21-25-37. Drlg. 2,980 ft.
Humble O. & R. Co. No. 1 Hadfield, C NW SE sec. 21-25-37. T.D. 3,013 ft.; S.D. for orders.
Magnolia Pet. Co. No. 1 E. O. Carson, C NW SW sec. 28-21-37. Drlg. 1,200 ft.

Skelly Oil Co. No. 1 Stuart, C NE NW sec. 15-25-37. Rigging up rotary.

Texas Co. No. 1 Eula Alexander, C NW SW sec. 7-21-37. Drlg. 932 ft.

Byrd-Frost, Inc. No. 1-A-1 Wells, C NW SW sec. 1-25-36. Cellar, pits.

Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. M.I.M.

Eddy County

Etz Bros. No. 2 State, C NW SW NE sec. 16-17-30. Drlg. 2,780 ft.; hole full of oil.

Premier Pet. Corp. No. 2 Dexter "E," NW SW NE sec. 20-17-30. T.D. 3,275 ft.; acidized two times; flowed 8½ bbls. per hour with 1,000,000 ft. of gas; testing.

Red Lake Oil Co. No. 6 State, NE NE SW sec. 22-17-28. T.D. 1,954 ft.; 800 ft. oil in hole; shot at 1,947-50 ft.; heads 25 bbls. dly. while cleaning out.

D. & B. Oil Co. No. 1 Jenkins, NW SW NW sec. 20-17-30. T.D. 3,258 ft.; tstg.; est. 200 B.P.D.

Dexter & Berry No. 1 Berry, NW NE NW sec. 21-17-30. Drlg. 2,915 ft.

Dooley & Dixon No. 1 Commerce, C W½ NW NW sec. 18-20-27. T.D. 958 ft.; fishing for bit.

Tignor, Etz & Keys No. 4 Keys "A," C SW SE sec. 10-17-28. Loc.

Grayburg Oil Co. No. 7 Burch, C NW NE sec. 19-17-30. Loc.

Eunice Area

Gulf Oil Corp. No. 8 Bell-Ramsey-State, C NW NW sec. 4-21-36. T.D. 3,870 ft.; set whipstock at 3,714-35 ft.; drlg. by at 3,730 ft.

Gulf Oil Corp. No. 6 Arnott-Ramsey "C," C NE NW sec. 21-21-36. Drlg. 3,616 ft.

Empire G. & F. Co. No. 4 State "D," C SE NE sec. 32-21-36, five-eighths mile N part of No. 157 lease. T.D. 3,941 ft.; acidized, waiting.

Gulf Oil Corp. No. 2 Janda "B," C NE SE sec. 32-21-36. T.D. 3,880 ft. in lime; cemented collar at 2,455 ft.; waiting.

Gulf Oil Corp. No. 1 Arnott-Ramsey "D," C NW NW sec. 32-21-36. T.D. 3,885 ft.; acidizing, no help; reacidized, no help; flowing 27 bbls. daily on gas lift.

Continental Oil Co. No. 5-A-18 Meyer, C SE NE sec. 18-21-36. Drlg. 3,933 ft.; flowed 40 bbls. per hr. on 2-hr. test.

Jim Murray No. 2 Walace, C NW NW sec. 3-21-36. T.D. 3,846 ft.; after acidizing, flowed 200 bbls. in 11 hrs. and died; cleaning out; to shoot.

Continental Oil Co. No. 1-B-14 Lockhart, C SW NW sec. 14-21-36. Drlg. 3,468 ft.

General Crude Oil Co. No. 2 State "E," C NE SW sec. 32-21-36. T.D. 3,082 ft.; shut down.

Shell Pet. Corp. No. 1 State "E," C NE NE sec. 6-21-36. T.D. 3,786 ft.; set 7-in. casing.

Gulf Oil Corp. No. 1 Janda "C," C NW SW sec. 15-21-36. T.D. 3,892 ft.; preparing to set casing.

Tide Water Oil Co. No. 2 State "E," C SE SE sec. 15-21-36. T.D. 3,906 ft.; testing.

Devonian Oil Co. No. 4 State-Heasley, C SW SW sec. 5-21-36. Drlg. 3,755 ft.

Atlantic Oil Producing Co. No. 1 State "K," C SE SW sec. 6-21-36. Drlg. 3,500 ft.

Shell Pet. Corp. No. 1 State "J," C SE SW sec. 32-20-37. Drlg. 3,290 ft.

Gulf Oil Corp. No. 9 Bell-Ramsey, C SW SW sec. 4-21-36. T.D. 2,885 ft. in lime.

Gulf Oil Corp. No. 4 Orcutt, C SE NE sec. 6-21-36. Drlg. 2,665 ft.

Gulf Oil Corp. No. 1 Frona Leck, C NW NE sec. 14-21-36. Drlg. 3,760 ft.

Gulf Oil Corp. No. 7 Arnott-Ramsey "C," C NW NE sec. 21-21-36. Drlg. 1,336 ft.

Continental Oil Co. No. 6-A-18 Meyer, C NW NE sec. 18-21-36. T.D. 290 ft.; set 10¾-in. casing.

Continental Oil Co. No. 9-B?4 Meyer, C NE NW sec. 4-21-36. Drlg. 3,400 ft.

Continental Oil Co. No. 10-B-4 Meyer, C NE NE sec. 4-21-36. Drlg. 2,975 ft.

Continental Oil Co. No. 11-B-4 Meyer, C SE SE sec. 4-21-36. Location.

Humble Oil & Ref. Co. No. 5 Adkins, C SE SW sec. 10-21-36. Drlg. 2,805 ft.

Samedan Oil Co. No. 1 Marshall, C SW NW sec. 12-21-36. T.D. 1,395 ft.; set 9⅝-in. casing.

Continental Oil Co. No. 5-A-18 Lockhart, SE SE SW sec. 18-21-36. Rigging up rotary.

Continental Oil Co. No. 2-B-18 Meyer, C NE NW sec. 18-21-36. Drlg. 3,550 ft.

Tide Water Oil Co. No. 1 State "G," C SE NE sec. 21-21-36. Drlg. 1,580 ft.

Landreth Production Co. and Ohio Fuel Supply Co. No. 1 State "E," C SW NW sec. 22-21-36. Drlg. 1,933 ft.

Texas Co. No. 2 State Aggies, C SW SE sec. 31-20-37. Drlg. 750 ft.

Humble Oil & Ref. Co. No. 1 State "D," C SE SW sec. 31-20-37. Cellar, pits.

Continental Oil Co. No. 12-B-4 Meyer, C SE SW sec. 4-21-36. Rigging up rotary.

Devonian Oil Co. No. 5 State-Heasley, C NW SW sec. 5-21-36. Location.

Devonian Oil Co. No. 6 State-Heasley, C NE SW sec. 5-21-36. Location.

Humble Oil & Ref. Co. No. 2 Knox, C SW SE sec. 10-21-36. Cellar and pits.

NORTHWEST NEW MEXICO

Bernalillo County

Norfine Realty Co., Inc., No. 2 Gallegas grant, SE NW NW sec. 19-11n-4e. Drlg. 1,600 ft. in sand and gravel.

Guadalupe County

Anton Chico Dev. Co. No. 2 fee, NW NE SW sec. 20-9n-17e. Drlg. 785 ft. in sand.

McKinley County

S. Dysart et al No. 1 Bouton, CSL NW NE sec. 14-14n-10w. T.D. 1,490 ft.; rmg. at 775 ft.

Claude Walker No. 1 Patd. NE SW SE sec. 20-20n-9w, completed in sand at 436-80 ft.; pumping 20 bbls. oil and 15 bbls. water.

Harding County

Khaay et al No. 1 De Baca, C sec. 19-20-31e. Rng. 8¼-in. at 847 ft.; 10-in. at 250 ft.

San Juan County

Atchison & Galloway No. Patd, C. SE SE sec. 19-29n-11w. Spdg. 75 ft.

W. L. Hair No. 1 Hair, NE NW NE sec. 23-29n-11w. S.D. 900 ft.

Kutz Canon O. & G. Co. No. 1 Day, SW SW SW sec. 20-28-10w. T.D. 4,400 ft.; pulled 4¾-in.; C.O. 3,900 ft.

Continental Oil Co. No. 53 Tribal, SE SE NW sec. 2-29n-19w. Landed 8¼-in. at 63 ft.; rmg. to 400 ft.

Nick Spatter No. 1 fee, C NE SW sec. 32-21-11w. S.D. 1,780 ft.; T.A.

Southern Union Gas Co. No. 6 Government, C NW NW sec. 19-28-10w. Drlg. 1,585 ft. sh.

Torrance County

45 Pet. Co. No. 1 Greenfield, C NW SW sec. 17-9-8e. Drlg. 1,750 ft. wh. L.

Bruce Frazier No. 1 Frazier, SE sec. 12-2n-31e. Drlg. 1,875 ft. gr. l.; S.O. in blue sdy. l. at 1,800 ft.

COLORADO

Adams County

Glenridge Oil Corp. No. 1 Hills, SE SE NE sec. 27-3s-64. Deepened to 4,240 ft. in sdy. sh. and cmtd. caves from 4,225 ft. to bottom.

Riddle Pet. Co. No. 1 Baxter, C SW sec. 2-3s-6w. S.D 700 ft. for D.P.

Archuleta County

Wm. E. Hughes Estate No. 6 Gramps, NW NE SE sec. 24-33n-2e (unsurveyed). Drlg. 1,100 ft.; good showing of oil but not yet in pay sd.

Wm. E. Hughes Estate No. 7 Gramps, NW SE SE sec. 23-33n-2e (unsurveyed). Spg.

Carl D. Linstrom No. 1 Crowley, SE SE SE sec. 3-22n-2e. M.I.M.

O. A. Larrazola, Jr. No. 1 Gonzales, SE SW SE sec. 24-32n-1e. M.I.M. (first report).

Oil City Pet. Co. No. 1-A Garnett, NW NE NW sec. 25-33n-2e. S.D. 1,515 ft.; top Dakota series 1,415 ft.

Oil City Pet. Co. and Archuleta O. & G. Co. No. 1 Reeder, Lot 5 (SW SE SW), sec. 24-33n-2e. Drlg. 440 ft.; good S.O. in sh. at 370 ft.; saturation continuing to bottom.

H. L. Kendrick No. 1 Crowley (unsurveyed), sec. 2-32-1. S.D. 1,125 ft. for 6¼-in.

Baca County

Paul R. Robb Pet. Corp. No. 1 Lovett, NW NW NW sec. 24-32s-48w. Cmtd. 12½-in. at 390 ft.

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal Co., NW NW sec. 18-9n-78w. T.D. 2,500 ft.; U.R. 12½-in. at 2,400 ft.

Jefferson County

Ruby Hill O. & G. Co. No. 1 Braden, SE SE SE sec. 24-4s-69w. S.D. 4,436 ft. to install control head; S.G. 6 ft. in hd. L.

Kit Carson County

Harvey V. Elwell will drill the Flagler block in Townships 8 and 9s, Range 50w, near the town of Flagler. The location will be in the C SE SW section 20-9s-50, about 50 miles west of the Kansas line. The block consists of 15,000 acres assembled by Frank Winegar following a seismograph survey by John H. Wilson's Colorado Geophysical Corp. The acreage comprises about two-thirds of the lower part of the Flagler block, the upper third being held by Continental Oil Co. and Gulf Oil Corp., with the Texas Co., the Magnolia Petroleum Co. and the Plains Exploration Co. having some acreage. Some spreads were sold involving bottom-hole money. The test will go to 8,000 feet, if necessary. Plans to test the Pennsylvanian and lower formations in eastern Colorado is a noteworthy factor in the exploration campaign now getting under way. With the exception of the Nee-No-Shee test in southern Kiowa County and one or two others still farther to the southeast, none of the tests drilled in former years went below the Dakota series. In 1918-21, H. A. Rispin drilled a well in section 3-9s-51, which was abandoned at 3,932 feet. It stopped 100 feet in the Morrison after having found water in the Dakota series at 3,515-3,815 feet.

La Plata County

McGarr Pet. Co. No. 1 Pinton Mesa, CSL NE NE sec. 34-35n-12w. Drlg. 3,200 ft.

Las Animas County

Mountain States Oil Corp. No. 1 Nikola, C NE SE sec. 10-34n-62w. S.D. 1,813 ft.

Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock, NE NE sec. 7-17s-62. T.D. 2,050 ft.; will U.R. 8¼-in. to S.O. more wtr.

Morgan County

Swisher et al No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line ,sec. 3-4n-60. S.D. 1,449 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE sec. 21-26n-17w. Contracted with Perry Coon to comp.; T.D. 3,705 ft.; drove tools to bottom; fsg.

Moffat County

The Mountain Fuel Supply Co. No. 1 Kuykendall, NE cor. SE section 22-12-100, on the Hiawatha gas dome, which was deepened from old total depth in 1935 and came in as an oil well in the Wasatch sand, the sand which yielded gas in the discovery well three-eighths of a mile to the northwest, is again being deepened. This well was completed in the summer of 1928 for 37,000,000 feet of gas first 24 hours from the pay at 1,992-2,025 feet. Last August it was deepened to 2,480 feet and made 140 bbls. of 38 gravity oil first 24 hours on the pump and 102 bbls. second day.

Two locations were released in Moffat County in the Texas Co. No. 3 Iles Investment Co., an offset in the Iles pool, and the Mountain Fuel Supply Co. No. 1 Carl Allen, on the Powder Wash structure. The last named is half a mile north of the same company's No. 1 Musser, the discovery well, which was completed in 1931 at 2,152 feet in the upper Wasatch for 35,000,000 feet of gas a day. The Musser well is the discovery and the only well so far drilled on the structure.

Mountain Fuel Supply Co. No. 1 Allen, NE SW SE sec. 32-12n-97w. Loc. (first report).

Texas Co. No. 3 Iles Inv. Co., 200 ft. E of W line and 165 ft. S of N line, Lot 4, sec. 23-4s-92. Cellar and pits (first report).

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. T.D. 1,449 ft. M.I. small rot.

Park County

The South Park Oil Co. No. 1 State, in the Hartsel district, which two weeks ago came in at 4,157 feet and gave promise of opening a new pool when it flowed over the top, has resumed drilling and will go through the Apache sand. It cored an igneous sill at 4,161-67 feet and drilled to the bottom of the sill at 4,188 feet. It then went back into saturated sandy shale at 4,188-4,212 feet and filled to the top and flowed a few barrels of oil. It is drilling below 4,234 feet.

South Park Oil Co. No. 1 Le Bert, NE NE NW sec. 21-11s-75w. Set 15½-in. at 60 ft. with 10 sacks; will carry 12½-in. to 1,000 ft.

South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Drlg. 4,234 ft. in sdy. sh.

Routt County

Mid-Colo. Pet. Co. No. 1 Omoholt, NE SE SE sec. 29-4n-87w. Set 8¼-in. on bottom at 1,910 ft. and S.D. acct. bad roads.

Washington County

The Carter Oil Co., which formerly did some wildcatting in Colorado, has returned to the state and its land department has been busy in eastern Colorado. This week a deal was closed whereby it acquired an undivided half-interest in the Hyde block of 33,000 acres on which the Indian Territory Illuminating Oil Co. is preparing to drill a deep test. The well will spud in about three weeks.

Indian Territory Ill. Oil Co. and Carter Oil Co. No. 1 Vance, C NE NE sec. 28-1s-49w. Bldg. rig.

Weld County

Continental Oil Co. No. 1 State Bank of Trenton, C SW NE sec. 21-8n-59w. Drlg. 3,150 ft.

Yuma County

Indian Territory Ill. Oil Co. No. 1 Strangways, C NW SW sec. 21-2s-43w. R.U.; will spud about May 24.

WYOMING

Albany County

California Co. No. 3 Hoist, 1,650 ft. W of E line and 970 ft. N of S line, sec. 18-17n-77w. T.D. 3,420 ft.; mixing mud and trying to get on bottom.

California Co. No. 1 Wilson, NW SW SW sec. 18-17n-76w. Drlg. 2,718 ft.

James Lake Oil Co. No. 1 George & Hunt, NW NE SE sec. 5-17-75w. T.D. 200 ft.; prep. to run 15½-in.

Big Horn County

Ohio Oil Co. No. 4 Byron Union, SW cor. NE section 22-56-97, on the Byron dome, was completed for 12 bbls. first 24 hours on the pump from the Embar lime at 5,587-5,700 feet. It will be acidized. This well is located on the escarpment and has the highest surface elevation, 4,243 feet, of any well drilled in the field, but ran low structurally. It was drilled to 5,735 feet and was plugged back to 5,700 feet. It topped the Tensleep at 5,710 feet, had saturation in the upper part and water in the lower section. The rim rock is known as the Court House rock, due to the fact that early Mormon settlers in the basin used the stone for constructing their public buildings.

Taylor Oil Co. No. 1 Hoskins, SE NE section 25-56-97, reported a completion last week at 5,371 feet, total depth, was treated with 2,000 gallons of acid. After standing 12 hours it swabbed 500 bbls. in 14 hours and then started to flow. It is estimated at 600 bbls. settled. Same interests have made a location for their second well half a mile to the north of the Ohio Oil Co. No. 1 Till.

J. W. Bales No. 1 Parker, C SW SW sec. 23-4-89. S.D. 690 ft. for pipe.

Joan Oil Co. No. 1 Howell, Lot 63 (NW SE NE) sec. 32-55n-97w. Resuming at 1,190 ft.

Montana-Wyoming Oil Co. No. 1-X Allen, Lot 52, sec. 18-56n-97w. Cmtd. 12½-in. at 638 ft. with 300 sacks; W.O.C.; (relief well for No. 1 Allen).

Ohio Oil Co. No. 1 Orson Vail, SW NW NE sec. 23-56n-97w. M.I. rotary.

Ohio Oil Co. No. 1 Robert Till, C SE SW sec. 24-56n-87w. Drlg. 3,735 ft.

Peay Oil Co. No. 1 Denio, Tr. 43-C sec. 15-55n-97w. T.D. 3,890 ft.; trying to cmt. off wtr. through hole in pipe.

Stock Oil Co. No. 1 Yates, CSL SW NE sec. 33-56n-97w. Drlg. 1,928 ft.

Taylor Oil Co. No. 1, SW SW NW sec. 24-56n-97w. M.I.M.; (first report).

Carbon County

Ohio Oil Co. No. 9 Harrison & Cooper, SW cor. section 35-20-78, Rock River field, an old well drilled deeper from the Dakota at 3,102 feet to the Sundance and carried through that horizon as a test of the entire section, has plugged back and recompleted in the Dakota as a repressuring well. It drilled to 3,800 feet and found the lower Sundance missing. The upper Sundance, topped at 3,436 feet, carried water.

One of the best wells completed in the upper Sundance in Rock River since the Ohio Oil Co. began deepening its old wells, is that company's No. 1 Alvy Dixon, NE NE SE section 34-20-78. It swabbed 1,045 bbls. first 24 hours at a total depth of 3,314 feet. The top of the Sundance was at 3,255 feet. It was originally completed in the Dakota at 2,934 feet in 1920 for 1,048 bbls. initial.

General Pet. Corp. No. 1 Union Pacific, SW NW sec. 5-19n-83w. Cmtd. 13⅜-in. at 492 ft., 400 sacks; drlg. 1,324 ft.

Ohio Oil Co. and California Co. No. 2 Union Pacific, C NE NE sec. 35-21n-79w. Drlg. 4,147 ft.

Ohio Oil Co. No. 7 Diamond Cattle, N½ sec. 35-20n-78w. R.U.R.
Ohio Oil Co. and California Co. No. 3 Union Pacific, C NE SE sec. 23-21n-79w. Drlg. 3,496 ft.
Ohio Oil Co. No. 2 Dixon, SE NE SE sec. 34-20n-78w. R.U. to deepen old well from 3,094 ft. to Sundance.
Union Oil Co. of California and Mutual Oil Synd. No. 1 Union Pacific, 1,890 ft. from E line and 1,320 ft. from S line, sec. 1-18-78w. Drlg. 4,500 ft.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW SW sec. 16-32n-69w. T.D. 2,500 ft.; U.R. 10-in. to bottom.
J. A. Olson No. 1 Reese, C NE SE sec. 10-32n-65w. M.I.M.

Fremont County

Tropic Oil Co. No. 1 Government, C SE SW sec. 34-27n-90w. T.D. 2,550 ft.; rng. 4¾-in.
Sinclair-Wyoming Oil Co. No. 1 Keisch, NE SW sec. 1-33n-92w. R.U.R.

Hot Springs County

California Exploration Co. No. 2 Government, NW SW NW sec. 4-44-96. T.D. 4,245 ft.; P.B. to 4,165 ft.; shot 80 qts.; cwdg. cg.
Ohio Oil Co. No. 73 Mill Iron Cattle Co., NE SW SE sec. 19-4n-98w. Drlg. 2,317 ft.
Stanolind O. & G. Co. No. 20 State-Ridgely, SE NE SE sec. 19-46n-98w. T.D. 3,931 ft.; C.O. to comp.

Lincoln County

Senrab Oil Corp. No. 3 Government, CSL SE NW sec. 10-26n-113w. S.D. 1,020 ft.

Niobrara County

Ohio Oil Co. No. 3 Agnes Rohlff, C SE NE section 32-36-65, Lance Creek field, joint with the Cow Gulch Oil Co., the most northerly Sundance sand well in the pool, was completed at 3,958 feet, in the top of the red beds, and is flowing 175 bbls. a day from the basal Sundance topped at 3,871 feet. Some water which appeared at first was exhausted. It is approximately 18 feet lower than the same company's No. 4 Putnam, the most easterly Sundance well in the pool. This well makes it look as if about 1,500 acres in the field will be productive in the Sundance.

Argo Oil Co. No. 7 Elliott, C NE NW sec. 5-35n-65w. T.D. 4,009 ft., red beds; swbg. and tstg.; est. at 200 bbls.
Black Hills Ref. Co. No. 1 Mills Est., C SW NW sec. 27-36n-64w. Spudded and S.D. account of weather.
Continental Oil Co. No. 6 Rohlff, C SW SW sec. 32-36n-65w. Drlg. 3,687 ft. in hd. gr. sh.
Continental Oil Co. No. 4 Joss, 90 ft. W of C SW NE sec. 6-35n-65w. Drlg. 3,118 ft.; sdy. sh.
Continental Oil Co. No. 2 Apex-3, C SE NW sec. 34-36n-65w. T.D. 260 ft.; cmtd. 13¾-in. at 251 ft.; with 250 sacks.
Lewis Gokel No. 1, NE SE NW sec. 31-35n-62w. Cmtd. 10-in. at 300 ft.; W.O. C.; (loc. cor.).
J. H. Huber Co. No. 1 Joss, NE SE NW sec. 6-25n-65w. T.D. 4,096 ft.; P.B. to 4,032 ft.; pumping 194 bbls. oil and same quantity of water; W.O. casing tester.
MacKinnie Oil & Drlg. Co. No. 1 Thompson, NE NW NE sec. 7-35n-65w. Spdg.
Ohio Oil Co. No. 8 Lamb, C SW NE sec. 5-35n-65w. Spdg. 406 ft.; 10¾-in. at 176 ft., 150 sacks.
Ohio Oil Co. No. 5 Converse Sheep, C SE SW sec. 32-36n-65w. S.D. below 4,600 ft.; believed to have cored top of Tensleep.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55n-85w. S.D. 3,070 ft. for swedge nipple; good show of oil 3 ft. in caprock.

Sublet County

Wright & Lackey, No. 1 Haddenham, SE NW SW sec. 21-28n-113w, (Dry Piney); R.U. Fort Worth spudder. (first report).

Sweetwater County

Mountain Fuel Supply Co. No. 1 Nightingale, C SW NE sec. 32-16n-104w. R.U.

Washakie County

Bruce C. Teeters No. 1 Brome-Gov't, CNL SW NW sec. 31-48n-90w. T.D. 1,502 ft.; top Frontier 1,498 ft.; 8¼-in. cmtd.; 1,500 ft.; W.O.C.
Wyoming O. & R. Co. No. 2 Gov't, NW SW SW sec. 31-48n-90w. Drlg. 1,695 ft.; may P. B. to 1,400 ft to str.

Weston County

Conway Oil Corp. No. 1 Gov't, C SE NW sec. 7-41n-60w. T.D. 2,304 ft.; ran 3-in. tubing to test show oil in Pashasapa (Madison). W.O.C.

MONTANA

Fallon County

The Montana-Dakota Utilities Co. No. 1, NE NW section 17-4n-62e, the discovery well on the Little Beaver Dome of the Baker-Glendive anticline, was given a test early this week in the presence of a large number of representatives of oil companies and failed to come up to earlier expectations. The tubing was run to 6,789 feet, 8 feet off bottom, and the fluid was swabbed down to 2,500 feet. The oil appeared to increase on the last pull, but it was accompanied with very little gas. The fluid showed about 20 per cent oil. The crude is very fluid and although it has a gravity of 26 degrees, it holds the water in suspension. The test was not entirely conclusive, but it is believed it will make a small well. It may be drilled deeper.

Montana-Dakota Utilities Co. No. 1, NE NW sec. 17-4n-6e. T.D. 6,797 ft.; testing.

Fergus County

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e. Fshg. at 1,100 ft.
Judith Operating Co. No. 2 Government, NW NE sec. 35-22n-17e. Drlg. 986 ft.
H. C. Rowland No. 3 Government, CEL NE SW sec. 18-17n-24e. Spdg. 50 ft.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-21-18e. Drlg. 576 ft.

Glacier County

The Cut Bank field furnished a surprise when the Cobb-Pardee No. 1 Stufft, the farthest north of any well in the field, showed for 13,500,000 feet of gas a day in the Moulton sand above the Sunburst and Cut Bank sands at 2,935-60 feet. The gas was killed with mud and drilling continued to the lower horizons. The nearest well is the Montana Power Gas Co. No. 1 Hall, C SW SE section 35-36-6w, 1½ miles to the southwest, which swabbed 312 bbls. first 24 hours at 3,050 feet when completed last fall. The performance of No. 1 Stufft will be watched with interest to see how it will perform when it reaches the objective as it may mean an important extension of the pool.

Two wells were completed and three wells reported completions last week were tested. Five new operations were getting under way.

Whetstone and others No. 1 Tribal-117, C SE NW section 36-33-6w, an outpost well in the southwestern part of the field and an offset to two producers, swabbed 140 bbls. first 24 hours before shooting at a total depth of 3,033 feet. It was shot with 15 quarts and responded with 175 bbls. first 24 hours on the swab. The Sunburst at 2,935-70 feet was dry. The top of the Cut Bank was at 2,980 feet and the pay at 3,015-20 feet. The elevation is 3,667 feet.

The Santa Rita Oil & Gas Co. No. 1 Shearon, CEL NE NE section 34-36-6w, reported a completion last week, was allowed to stand 72 hours. At the end of the period the oil stood 700 feet and water 100 feet in the hole. It will be plugged back from 3,165 feet to 3,122 feet and saved for future production.

Jack Marshall No. 1 Tribal-120, NE NE section 7-32-5w, reported a completion, but not tested, last week, made 85 bbls. first 24 hours on the pump.

The Santa Rita Oil & Gas Co. No. 1 Barrington, SE SW NW section 24-33-6w, was completed at 2,903 feet. Top of Cut Bank zone was at 2,825 feet and pay at 2,865-80 feet. Oil rose 1,000 feet after standing 48 hours. It swabbed 10 bbls. first 24 hours and will shoot with 40 quarts.

R. C. Tarrant No. 2 Reikhoff, NW SE section 3-34-6w, pumped 55 bbls. first 24 hours from the pay at 2,964-70 feet.

The International Refining Co.'s 20-mile 4-inch line from the northern part of the field to Shelby, has been taken up and replaced with a 6-inch line. Old pipe will be used for the extension of its gathering system to the Tribal leases in the southern part of the field now being drilled into production.

Cobb and Pardee and Nadeau Brothers are laying a 2-mile, 3-inch line from the Vandemark and Walberger leases in section 31-35-6w, to the loading racks at Cut Bank.

Cobb-Pardee No. 1 Stufft, C SE NW sec. 25-36n-6w. Drlg. 2,975 ft.
Cobb-Pardee No. 2 Morrison, CEL NE SE sec. 24-33n-6w. Rig.
Consol. Gas Co. No. 1 Allotted-114, CNL NE SW sec. 31-33n-5w. Drlg. 1,130 ft.
A. E. Crumley No. 2, Allotted-113, SW NW SE sec. 31-33n-5w. Cellar (first report).
Dakota-Montana Oil Co. No. 1 Winkler, SW NE NW sec. 36-35n-6w. T.D. 2,160 ft.; C.O. 2,100 ft.
Goodman Oil Co. No. 1 Tribal, SW NW SW sec. 35-33n-6w. Drlg. 2,805 ft.;
Hannah-Porter Co. No. 1 Allotted-130, C Lot 3, sec. 6-32n-5. Spdg. 160 ft.
B. V. Hole No. 1 Tribal, C NW SW sec. 36-33n-6w. M.I.M.
B. V. Hole No. 1 Allotted-124, 640 ft. out of NE cor. sec. 1-32-6w. M.I.M.
R. C. Jeffries No. 4-A Lukens, NE NE NE sec. 12-33n-6w. Drlg. 2,500 ft.
Kincheloe-Hanlon No. 2 State, NE NE NE sec. 36-33n-6w. Spdg. 250 ft.
Kately No. 3 Drumheller-Ward, C Lot 2, sec. 10-34n-6w. Cmtd. 7-in. at 2,873 ft.
Kately No. 4 Drumheller-Ward, SE NE NE sec. 10-34n-6w. Spdg. 225 ft. (first report).
Montana Headlight Oil Co. No. 3 Britton, NE NE SE sec. 11-34n-6w. Drlg. 2,840 ft.
Montana Power Gas Co. No. 2 Van Ormer, C SE SE sec. 8-33n-5w. Cmtd. 7-in. at 2,850 ft.; W.O.C.
Montana Power Gas Co. No. 4 Seeba, SW SW NW sec. 2-34n-6w. Spdg. 400 ft.
Montana Power Gas Co. No. 1 Warfield unit, CWL SW sec. 9-33n-5w. Drlg. 2,810 ft.
Montana Power Gas Co. No. 1 Carrigeaux, 125 ft. W of C NE NW sec. 28-33n-5w. Drlg. 2,385 ft.
Nadeau Bros. No. 1 Ewald, C NE SW sec. 9-32n-5w. Bldg. rig (first report).
Nadeau Bros. No. 3 Farmers State Bank, C SW NE sec. 17-33n-5w. Drlg. 2,425 ft.
Par Oil Co. No. 7 Haines, NW SW SW sec. 2-34n-6w. R.U. (first report).
Santa Rita O. & G. Co. No. 2 McCabe, NE SW NW sec. 31-33n-5w. Cmtd. 10-in. at 300 ft.; W.O.C.
Neil Spencer No. 2 Tweedy, 925 ft. NS line, 1,980 ft. 2 WL SE sec. 25-33n-6w. Drlg. 1,330 ft.
H. R. Patterson No. 1 Miller, C NE NE sec. 1-33n-6w. R.U.
Stanley Gray No. 1 Allotted-132, NW SE NW sec. 22-34-7w. Drlg. 1,850 ft.
Stewart No. 1 Knudson-All.-119, C SE SW sec. 1-32n-6w. M.I.M. (first report).
R. C. Tarrant No. 6 Britton, C SE SW sec. 12-34n-6w. Drlg. 2,390 ft.
R. C. Tarrant No. 6 Getty, SE NE SW sec. 2-34n-6w. Loc. (first report).
Tarrant-Long No. 5 Miller, C NE NE sec. 24-34n-6w. Drlg. 1,650 ft.
Texas Co. No. 2-B Allotted-122, SE NW NW sec. 6-32n-5w. T.D. 2,844 ft.; 7-in. at 2,825 ft.; W.O.C.
Texas Co. No. 1 Govt., C SW NE sec. 17-32n-5w. Spdg. 90 ft.
Texas Co. No. 6 Morrison, 660 ft. S of NW cor. sec. 22-35n-6w. Drlg. 2,719 ft.; Colo. 520 ft.
Texas Co. No. 2, Unit 9, C SW NE sec. 9-32n-5w. Cmtd. 10¾-in. at 347 ft.
Wilkinson et al No. 1 Tribal, Tr. 127, C NE NE sec. 1-32n-6w. Rigged; W.O. engine.
Wilkinson et al No. 1 Tribal, 126, C NE NW sec. 7-32n-5w. Drlg. 1,660 ft.

Petroleum County

West Dome Oil Co. No. 1, SW SE NE sec. 9-15n-29e. Drlg. 1,293 ft.; first Cat Creek at 1,240-88 ft.; test. 5 bbls.); cased off with 5 3/16-in. at 1,290 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15w. Drlg. 431 ft.

Pondera County

William M. Fulton No. 1 Price, SW NE NE section 18-27n-4w. Pondera district, lost the hole at 1,710 feet and is skidding rig for No. 1-A after plugging and abandoning.

Wm. M. Fulton No. 1-A Price, SW NE NE sec. 18-27n-4w. Skdg. rig to loc. (first report).
Clinch Pet., Ltd., No. 1 Hollan, NW SW NW sec. 12-28-6w. Cmtd. cave at 2,000 ft.; W.O.C.
Warren Hastings No. 2 Erickson, NW SW NW sec. 10-27n-4w. T.D. 1,585 ft.; cmtg. cave.
Texas Co. No. 1 Valier Unit No. 1, C NW SE sec. 32-31n-5w. Drlg. 1,640 ft.
Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. Spdg. 275 ft.
Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27-4w. Bldg. dk.

Teton County

R. C. Tarrant No. 1 Wallenstein, NW NW SW sec. 9-27n-5w. Spdg.

Toole County

One completion was reported in the Devon area in C. Leonard Smith No. 1 I. Halverson, C NE SE section 18-33-2e. It was completed at 785 feet for 4,000,000 feet of gas.

One completion and two new operations were reported in the Kevin-Sunburst field. A. E. Crumley No. 6 Fryberger, NE SE SE section 24-35-3w, pumped 20 bbls. per day initial from the Sunburst sand at 1,600-05 feet.

A. E. Crumley No. 9 Shaw, SE SW NE sec. 35-36n-2w. Spdg. 70 ft.
Crumley & Son No. 4 Fryberger, SE NW SE sec. 24-35n-3w. R.U. (first report).
Agen & Goedderts No. 1 Goedderts, C SE NE sec. 16-35n-3w. Drlg. 50 ft.
Big West Oil Co. No. 1 Dalquist, SW NE NW sec. 21-35n-3w. Drlg. 1,705 ft. in sand.
Carscallen & Mitchener No. 1 Krueger, 1,320 ft. W of E line, 1,980 ft. S of N line, sec. 10-34n-2w. T.D. 1,650 ft.; acidized; did not recover load.
Coolidge & Coolidge No. 2 Shaw, SE SE SE sec. 26-36n-2w. Drlg. 1,258 ft.
Continental Oil Co. No. 7 State, SE NE NE sec. 16-35n-2w. R.U.
Fraser & Smith No. 1 Crabtree, NE NE SE sec. 14-34n-2w. T.D. 1,310 ft.; fshg.
Imperial-Craig Oil Co. No. 17 Bluhm, CWL NE NE sec. 19-35n-1w. Drlg. 630 ft.
Imperial-Craig Oil Co. No. 18 Bluhm, NW NE NE sec. 19-35n-1w. Drlg. 465 ft.
T. P. Kyle No. 1 Wolnsti, C SE SE sec. 3-33n-1w. Spdg.
Monopeg Oils, Ltd., No. 3 Dipple, CSL SW NW sec. 28-35n-1w. T.D. 1,450 ft.; R.U. to drill in.
Munger No. 1 Peterson, NW NW SW sec. 8-35n-2w. Drlg. 70 ft. (loc. and name cor.).
C. T. Olen No. 6 Engemoen, SE SW NW sec. 14-35n-2w. R.U. (first report).
Burt Smith No. 1 Haugen, SE SE NW sec. 2-35n-3w. S.D. 1,245 ft. (loc. cor.).
Welch Bros. No. 1 Dewald, SW NE NE sec. 26-36n-2w. S.D. 1,557 ft.; Sunburst at 1,551-56 ft.; dry.
Watson No. 1 Leach, SE SE NE sec. 31-35n-3w. Drlg. 90 ft.
Superior Oil Co. No. 4 Haugen, SW SE NE sec. 11-35n-3w. T.D. 1,806 ft.; Ellis-Madison 1,801-06; S.O. will acidize.
Newstead & Vanderpas No. 1 Solberg, NE NW SE sec. 20-35n-3w. Drlg. 100 ft.
R. C. White No. 2 Haugen, CNL NE SE sec. 11-35n-3w. R.O.G. (first report).

UTAH

Daggett County

Mountain Fuel Supply Co. has made a location in the Clay Basin district for its No. 1 State, NW SE SW section 16-3n-24e, which will drill later this summer. It is located three-fourths of a mile to the northwest of its No. 2 Murphy, the discovery well in the lower sands which was completed last year at 5,750 feet for 13,000,000 feet of gas in the Dakota.

Grand County

Columbia Crude Co. No. 1 Rath, SW SE sec. 12-35n-20e. Drlg. 530 ft.
Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22e. S.D. 4,880 ft. to resurvey; went through 2,400 ft. of Permian, Rico and Cutler beds.
Glenn Ruby et al No. 1 State, NE SE SE sec. 34-31s-16e. Drlg. 1,995 ft. in sand.

Utah County

Diamond Oil Co. No. 4 Govt., CSL SE NW sec. 10-8s-5e. S.D. 3,956 ft. in petroleum residue substance.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Drlg. 1,240 ft.

Washington County

Arrowhead Pet. Corp. No. 1-A, SE SW NE sec. 1-43s-15w. T.D. 2,475 ft.; sidetracking tools; good show oil.

WASHINGTON

Washington apparently has its first commercial oil well in the Washington Oil Co., Ltd., No. 1 Kipling, on the Hoh River structure in section 12-26-14, Jefferson County. It gauged 3½ bbls. per hour for 12 hours on a pumping test and then was shut in. Sand was topped at 280 feet and was drilled 27 feet, being still in sand when it stopped. A string of 8-inch pipe was run to bottom and perforated and 2-inch tubing was run with packer. It flowed when cleaned

out and was then put on the pump. Test was made in the presence of a number of state officials. This is close to a well drilled on the same section several years ago by the Leslie Petroleum Co. which showed for 25 bbls. of 39.7 gravity oil in sand at 768-90 feet. The Leslie hole was drilled deeper and lost and the sand could not be subsequently tested. The late C. T. Lupton, of Denver, geologized the structure in 1913.

Eastern Fields

(Continued from Page 74)

foot gasser on the E. J. Nichols farm at 2,975-3,125 feet.

In Calhoun County, Massey & Jarvis completed a light gas well on the C. B. Parsons farm in Washington district. The Big Lime was at 1,681-1,781 feet, with gas at 1,731-35 feet, and the Big Injun sand at 1,781-1,850 feet.

In Lewis County, the Columbian Carbon Co. drilled a test on the C. A. Riffee farm in Hackers Creek district to a total depth of 2,470 feet and it is a light gas well gauging about 35,000 feet a day.

In Lincoln County, the Big Laurel Gas Co. completed No. 3 Calloway Plumley farm in Union district at 2,200 feet, as a gas well gauging 94,-000 feet a day.

In Logan County, the Boone County Coal Co. completed No. G7 on its own property in Logan district at a total depth of 3,275 feet as a gas well gauging 414,000 feet a day. The gas showed at 3,231-55 feet. In this district, Zeibold, Rummell and others completed the test on the George Nichols farm as a small gas well.

In Ritchie County, W. R. Cary completed a test on the Albert Metz farm in Grant district in the Big Injun sand as a small gas well at a total depth of 1,866 feet.

Other Operations

In Braxton County, the Pittsburgh & West Virginia Gas Co. has made a location for a test on the W. L. Hopkins farm of 97 acres in Birch district. The elevation at the mouth of the test is 1,004 feet.

In Boone County, the Pure Oil Co. has made a location for No. 82 on the Federal Coal Co. tract in Sherman district and is building a road to No. 83. In Scott district, the United Fuel Gas Co. is rigging up to deepen No. 1,762 on the Horse Creek Coal Land Co. lease.

In Cabell County, W. C. Kingery and others are moving in materials for a test on the Methodist Church property in McComas district, and on Tyler Creek. Fifteen wells are drilling in this county and four others are rigging up. There are also additional locations scattered through the field.

In Calhoun County, the McCall Drilling Co. is building a rig for a test on the Diana Hall farm on Beech Run in Lee district. Here on the Left Fork of Barnes Run, the South Eastern Gas Co. has spudded in and started drilling a test on the James Roberts farm. In Washington district, on Rush Run of West Fork, the Ofa Gas Co. has a rig standing for a test on the M. B. Keith farm.

In Gilmer County, the Pittsburgh & West Virginia Gas Co. has made a location for a test on the J. W. Vannoy farm of 103 acres in DeKalb district.

In Clay County, S. M. Vockel and others have made a location on the H. Reed heirs, J. A. Jones, agent, on Middle Creek in Pleasant district. In Henry district, the South Penn Oil Co. has made locations for two additional wells on the O. D. Stockley farm.

In Monongalia County, the Pittsburgh & West Virginia Co. has made a location for a test on the Alex Hennen 94-acre farm in Battelle district. In this district, the Hope Construction & Refining Co. is down 3,132 feet deepening the No. 570 on the Henry S. Shriver farm, and is grading a road for a test on the C. L. Eakin farm.

In Roane County, L. C. Young and others have a location for a test on the W. R. Harper farm on the Poca River in Harper district. In Curtis district, the Henderson Oil Co. has a location for a test on the L. C. Burdette farm on Reedy Creek.

In Upshur County, the Pittsburgh & West Virginia Gas Co. has made a location for a test on the Rosa L. Strader farm of 129 acres in Meade district. The elevation of the mouth of the test is 1,514 feet and it is found on the Crawford NE quadrangle. In Braxton County, this company has also made a location for a test on the M. E. Ramsey farm, elevation 1,011 feet and in Birch district.

In Wetzel County, McIntire and others are drilling a test on the W. H. Lemasters farm in Proctor district which is down 450 feet. In this district, the Manufacturers Light & Heat Co. is down 250 feet in a test on the Freeman Blake farm.

Canadian Fields

(Continued from Page 70)

4 Bow River has spudded on the Dick Copithorne ranch, LSD 2, section 31-24-4w5. Standard tools are being used.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is below 5,523 feet.

On the Moose dome, west of Calgary, Moose Oils No. 2, LSD 8, section 29-22-6w5, is preparing to resume from 252 feet where 18⅝-inch casing was cemented last fall.

On the Rickert structure west of Turner Valley, Paramount Oils No. 1, LSD 2, section 28-19-4w5, is below 5,738 feet.

On the Highwood-Sinclair structure south of Turner Valley, Maple Leaf Royalties No. 1 Banner, LSD 6, section 34-17-3w5, will run casing preparatory to resuming from 2,597 feet. It has sufficient gas from the well for drilling and camp.

In the Pekisko Hills area, Pekisko Co. No. 1, LSD 6, section 6-17-2w5, has arranged to resume from 3,480 feet, after being shut down nearly a year. The location is close to the ranch of King Edward VIII, near High River. The test got the top of the Madison lime at 1,071 feet and encountered gas flows, estimated 4,-000,000 feet a day at various depths in the lime.

On the Kootenay dome, northwest of Turner Valley, Roxana Petroleum is hauling machinery and coal for No. 1, section 8-24-7w5.

On the Watson structure, Mar Jon Oil Co. No. 3, LSD 3, section 4-10-2w5, has overcome caving and is below 4,400 feet, with some gas. Mar Jon-Maxmont No. 4, LSD 10, section 20-9-2w5, is drilling. Raven Oils No. 1, LSD 1, same section, has resumed from 1,225 feet. It is being completed by the Union Drilling Co. of Calgary.

High River—Aldersyde

In the High River-Aldersyde area, east of Turner Valley, Arca Development Co. No. 1, NW section 24-18-1w5, has spudded. Location is 8 miles southwest of High River. The test is backed jointly by Imperial Oil, Ltd., the Canadian Western Natural Gas, Light, Heat & Power Co. and Calgary and Edmonton Corp. The development is in an unexplored area and is undertaken under a unitization plan covering a block of 40,-000 acres. The primary objective is gas production, and the potential horizon is looked for around 7,000 feet. Drilling is in charge of the Imperial Oil, Ltd., production department, heavy duty rotary tools being used with gas for power from the main line of the Canadian Western company. The outfit will run three shifts.

On the Aldersyde structure, Ranchman's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, is below 6,738 feet in a softer formation with increase in both oil and gas shows.

Globe Development Co., of Calgary, which last year located a test on the Aldersyde structure in LSD 3, section 2-20-29w4, is planning a reorganization. Some preliminary work has been done.

In the DeWinton area, northeast of Turner Valley, Wales Petroleum No. 1 Anglesey-Lakeview, LSD 1, section 22-21-1w5, has derrick up and is preparing to install rotary equipment, to resume from 4,500 feet.

On the New Valley structure, farther west, McLeod Oil Co. No. 1 New Valley, LSD 4, section 6-21-2w5, is below 4,590 feet, carrying casing behind the tools.

Test Near Calgary Limits

Shareholders of Del Monica Oil Co. at a meeting recently arranged for a test on the Spy Hill structure a short distance northwest of the Calgary city limits. The company holds 10,-240 acres on the structure, and tentative location has been made by Russell V. Johnson, geologist. Cable tools are being moved to location and the test will spud within a couple of weeks. Officers of the company are: President and managing director, Julius Zaetschky; vice president, P. Shackleton; secretary-treasurer, Robert M. Kelly; directors, Ernest T. Brown and George McBeth.

Wainwright Field

In the Wainwright field, east central Alberta, Montreal Alberta Oil Co. No. 1, LSD 2, section 15-45-7w4, is running casing preparatory to testing oil shows encountered in the lime just below 3,390 feet. The oil is a light green crude, much lighter than the crudes encountered in the upper sands of the Wainwright field around 2,200 feet. Samples are being analyzed. The oil was accompanied by a fairly strong gas flow. Operations since drilling was resumed a few weeks ago have been in charge of Milt Williamson. There is no other drilling under way in the Wainwright field but the reported strike was followed by extensive leasing.

Imperial Operations

Imperial Oil, Ltd., will carry on seismograph surveys this summer in the Coaldale area near Lethbridge. A series of test holes will be drilled, dynamite exploded, and the findings recorded and correlated with the log of the Texas-Imperial deep test west of Lethbridge. The field operations will be in charge of R. F. Weichert of the Carter Oil Co. of Tulsa, with a staff of about 20, and work will continue for about two months, directed from a temporary office at Lethbridge. Dr. T. A. Link, chief geologist of Imperial Oil, Ltd., visited Lethbridge recently to supervise the commencement of the survey.

Border Fields

On the Del Bonita structure, south of Lethbridge, Terminal Oil Co. No. 1, H. Orcutt location, NE section 18-1-21w4, will be deepened into the Madison limestone. Cavings and rotary mud from the gun-perforated Sunburst formation have filled the hole 90 feet from the bottom. A string of 4¾-inch casing will be run and gas from the Madison allowed to escape between the two strings, which is expected to clear out the rotary mud at the Sunburst zone and any oil that may follow the mud. Most of the oil coming from the well is now thought to be from the lime. The hole bottoms at 5,110 feet and the lime zone was entered at 5,027 feet. The well is making some oil, approximating commercial produc-

(Continued on Page 91)

At the annual barbecue and picnic at Houston by Gulf Coast scouts preceding National Oil Scouts Association convention in Dallas, May 29-31. Standing left to right: George E. Robinson, chief scout, Pure Oil Co.; J. W. (Red) Selby, chief scout, Shell Petroleum Corp.; E. M. (Big Boy) Pinckard, scout, Pure Oil Co.; Dwight L. Becker, Amerada Petroleum Corp.; Harry Leyendecker, chief scout, Tide Water Oil Co.; N. W. Boston, land man, Tide Water Oil Co., and J. L. McAdams, scout, Bishop Oil Corp.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location:	S.T.R.	Depth	Status
Shell Oil Co., No. 11 Capitan, Santa Barbara Co.	32- 5-30	2,789	pump 134 b.d.
Shell Oil Co., No. 13 Capitan, Santa Barbara Co.	32- 5-30	2,650	sd. sh. drlg.
Shell Oil Co., No. 14 Capitan, Santa Barbara Co.	32- 5-30	1,615	flow 201 b.d.
Shell Oil Co., No. 15 Capitan, Santa Barbara Co.	32- 5-30	....	bldg. rig
Shell Oil Co., No. 16 Capitan, Santa Barbara Co.	32- 5-30	....	bldg. rig
La Canada Oil Co., No. 1 Capitan, Santa Barbara Co.	32- 5-30	....	bldg. rig
Honolulu Oil Corp., No. 9 Elwood, Santa Barbara Co.	tideland	6,705	flow. 65 b.d.
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara	15- 4-29	8,506	P.B. 6,856
York Oil Co., No. 3 Lompoc, Santa Barbara Co.	33- 8-34	....	rigging up
Union Oil Co., No. 16 Orcutt, Santa Barbara Co.	26- 9-34	3,730	sd. sh. drlg.
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co.	25-10-35	3,035	rigging up
Bankline Oil Co., No. 1 Coal Oil Pt., Santa Barbara Co.	tideland	5,510	redrlg. 700
Anacapa Oil Co., No. 4 Mesa, Santa Barbara Co.	28- 4-27	1,861	sd. sh. drlg.
Huseley & Harsett, No. 1 Mesa, Santa Barbara Co.	28- 4-27	....	bldg. rig
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	3,210	sdtr. lug
Union Oil Co., No. 10 Bardsdale, Ventura Co.	12- 3-20	6,055	pump. 130 b.d.
Pet. Securities Co., No. 1 Bardsdale, Ventura Co.	7- 3-19	4,490	gr. sd. drlg.
Calkan Pet. Co., No. 1 Sespe, Ventura Co.	23- 5-20	510	sd. sh. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,180	hd. sh. drlg.
Wasibi Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	....	rigged up
Laing & Jacobs, No. 1 Shiells Canyon, Ventura Co.	32- 4-19	1,275	cleaning out
Bestco Pet. Co., No. 1 Shiells Canyon, Ventura Co.	2- 3-19	2,798	hd. sd. drlg.
Bankline Oil Co., No. 1 Shiells Canyon, Ventura Co.	3- 3-19	4,597	gr. sd. drlg.
Petroleum Securities, No. 1 Shiells Canyon, Ventura	3- 3-19	3,331	hd. sd. drlg.
The Texas Co., No. 129 Shiells Canyon, Ventura Co.	4- 3-19	4,812	P.B. 4,260
The Texas Co., No. 130 Shiells Canyon, Ventura Co.	4- 3-19	2,075	hd. sd. drlg.
The Texas Co., No. 131 Shiells Canyon, Ventura Co.	4- 3-19	1,160	sd. sh. drlg.
Hull, James, No. 1 Santa Susana, Ventura Co.	2- 2-18	1,791	recmtd. 500
Bolsa Chica Oil Co., No. 3 Temescal, Ventura Co.	4- 4-18	2,197	br. sh. drlg.
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co.	4- 4-18	....	rigging up
Johnson, R. P., No. 1 Temescal, Ventura Co.	21- 4-18	1,673	P.B. 1,300
General Pet. Corp., No. 2 Oxnard, Ventura Co.	26- 2-23	6,986	sd. sh. drlg.
Rincon Oil Co., No. 3 Rincon, Ventura Co.	tideland	2,193	cleaning out
Continental Oil Co., No. 5 San Miguelito, Ventura Co.	24- 3-24	4,084	sd. sh. drlg.
C. C. M. Oil Co., No. 1 Javon, Ventura Co.	15- 3-24	840	sd. sh. drlg.
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	6,335	cleaning out
Associated Oil Co., No. 2 Lost Hills, Kern Co.	2-26-20	....	rigging up
Richfield Oil Co., No. 2 Devil's Den, Kern Co.	14-25-18	3,176	sd. sh. drlg.
Den Pet. Co., No. 1 Devil's Den, Kern Co.	20-25-19	....	bldg. rig
East Puente Oil Co., No. 21 McKittrick, Kern Co.	11-30-21	....	rigging up
Calcrude Pet. Co., No. 1 McKittrick, Kern Co.	34-30-22	1,251	sd. sh. drlg.
Welport Oil Co., No. 14 McKittrick, Kern Co.	26-29-21	1,572	cmtd.
Bergman, H. L., No. 1 McKittrick, Kern Co.	30-30-22	951	br. sh. drlg.
General Pet. Co., No. 1 South Belridge, Kern Co.	30-28-21	11,377	suspended
Standard Oil Co., No. 4 North Belridge, Kern Co.	36-27-20	7,363	sd. sh. drlg.
Associated Oil Co., No. 5 North Belridge, Kern Co.	34-27-20	5,971	hd. sh. drlg.
Belridge Oil Co., No. 18-35 North Belridge, Kern Co.	35-27-20	5,865	sd. sh. drlg.
Belridge Oil Co., No. 17-35 North Belridge, Kern Co.	35-27-20	7,141	sd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	9,492	P.B. 9,340
Union Oil Co., No. 21 North Belridge, Kern Co.	36-27-20	7,086	br. sh. drlg.
Continental Oil Co., No. 7 North Belridge, Kern Co.	36-27-20	8,154	O.S. drlg.
C. C. M. Oil Co., No. 18 Kern Front, Kern Co.	23-28-27	1,997	sd. sh. drlg.
C. C. M. Oil Co., No. 19 Kern Front, Kern Co.	23-28-27	....	rigging up
Republic Pet. Co., No. 11 Kern Front, Kern Co.	11-28-27	1,080	sd. sh. drlg.
Republic Pet. Co., No. 12 Kern Front, Kern Co.	24-28-27	....	rigging up
Republic Pet. Co., No. 13 Kern Front, Kern Co.	12-28-27	....	bldg. rig
Haggarty, H. W., No. 1 Kern Front, Kern Co.	13-28-27	....	bldg. rig
Vega Oil Co., No. 1 Kern Front, Kern Co.	11-28-27	1,751	sd. sh. drlg.
National Oil Co., No. 5 Kern Front, Kern Co.	1-28-27	1,999	sd. sh. drlg.
National Oil Co., No. 6 Kern Front, Kern Co.	11-28-27	....	rigging up
General Pet. Corp., No. 6 Kern Front, Kern Co.	14-28-27	....	rigging up
General Pet. Corp., No. 7 Kern Front, Kern Co.	14-28-27	....	bldg. rig
Kern River Oilfields, No. 8 Kern Front, Kern Co.	25-28-27	....	bldg. rig
Associated Oil Co., No. 7 Kern Front, Kern Co.	23-28-27	1,895	O.S. drlg.
Standard Oil Co., No. 14 Kern Front, Kern Co.	15-28-27	2,198	sd. sh. drlg.
The Texas Co., No. 16 Kern Front, Kern Co.	23-28-27	2,045	cmtd. 1,748
Union Oil Co., No. 8 Kern Front, Kern Co.	11-28-27	1,692	bailing
American Expl. Co. No. 1 Kern Front, Kern Co.	16-28-27	2,625	gr. sd. drlg.
Ausbrit Oil Co., No. 1 Premier, Kern Co.	20-27-27	2,139	cmtd. 2,065
Poso Pet. Co., No. 1 Premier, Kern Co.	2-27-27	1,652	sd. sh. drlg.
Unger, M., No. 1 Dominion, Kern Co.	27-26-28	1,619	P.B. 1,410
McMahan, Hugh, No. 1 Mount Poso, Kern Co.	27-26-28	1,537	cleaning out
Union Oil Co., No. 11 Mount Poso Tribe, Kern Co.	28-27-28	....	bldg. rig
Cal-Coast Apex Oil Co., No. 1 Mount Poso, Kern Co.	36-26-27	1,398	sd. sh. drlg.
General Pet. Corp., No. 13 Mount Poso, Kern Co.	16-27-28	1,161	sd. sh. drlg.
General Pet. Corp., No. 14 Mount Poso, Kern Co.	16-27-28	....	bldg. rig
Santa Anita Oil Co., No. 1 Mount Poso, Kern Co.	11-27-27	1,392	gr. sd. drlg.
Tilton & Harp, No. 1 Mount Poso, Kern Co.	6-27-28	951	sd. sh. drlg.
Union Oil Co., No. 1 Poso Outpost, Kern Co.	34-27-28	2,212	dry; abd.
British American Oil Co., No. 1 Mount Poso, Kern Co.	31-27-28	1,260	sd. sh. drlg.
Woods & Bailey, No. 1 McFarland, Kern Co.	16-26-26	4,175	sd. sh. drlg.
Connelly, T. E., No. 1 Fruitvale, Kern Co.	21-29-27	4,198	gr. sd. drlg.
Mosebach Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	3,653	hd. sh. drlg.
Trico Oil & Gas Co., No. 1 Fruitvale, Kern Co.	23-29-27	2,794	sd. sh. drlg.
Magnet Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,069	fish. liner
Western Gulf Oil Co., No. 23 Fruitvale, Kern Co.	27-29-27	3,650	cmtd. 3,645
Western Gulf Oil Co., No. 25 Fruitvale, Kern Co.	27-29-27	3,460	flow. 397 b.d.
Nydia Pet. Co., No. 1 Fruitvale, Kern Co.	26-29-27	1,180	sd. sh. drlg.
Hogan Pet. Co., No. 13 Mountain View, Kern Co.	32-30-29	6,005	flow. 2,580 b.d
Hogan Pet. Co., No. 14 Mountain View, Kern Co.	32-30-29	5,894	sd. sh. drlg.
Hogan Pet. Co., No. 15 Mountain View, Kern Co.	4-31-29	1,593	sd. sh. drlg.
Buffalo Oil Co., No. 3 Mountain View, Kern Co.	19-30-29	1,892	cmtd. 877
Petrol Prod. Co., No. 1 Mountain View, Kern Co.	32-30-29	918	sd. sh. drlg.
Mohawk Oil Co., No. 16 Mountain View, Kern Co.	30-30-29	6,074	cmtd. 5,565
Mohawk Oil Co., No. 18 Mountain View, Kern Co.	30-30-29	5,985	rig to pump
Mohawk Oil Co., No. 19 Mountain View, Kern Co.	30-30-29	....	rigging up
Allied Pet. Corp., No. 1 Mountain View, Kern Co.	19-30-29	5,168	pump. 370 b.d.
Treasure Oil Co., No. 1 Mountain View, Kern Co.	12-30-28	3,181	sd. sh. drlg.
Jergins Trust, No. 8 Mountain View, Kern Co.	19-30-29	4,385	sd. sh. drlg.
Shell Oil Co., No. 9 Mountain View, Kern Co.	32-30-29	5,996	rig to pump
Shell Oil Co., No. 10 Mountain View, Kern Co.	32-30-29	5,990	rig to pump
Shell Oil Co., No. 11 Mountain View, Kern Co.	32-30-29	2,971	sd. sh. drlg.
Vesta Pet. Co., No. 10 Mountain View, Kern Co.	19-30-29	1,765	sd. sh. drlg.
Standard Oil Co., No. 26 Mountain View, Kern Co.	13-30-28	5,035	flow. 380 b.d.
Mohawk Pet. Co., No. 1 Arvin, Kern Co.	10-31-29	1,851	sd. sh. drlg.
R. & R. Dev. Co., No. 1 Arvin, Kern Co.	32-30-30	727	granite drlg.
Ohio Oil Co., No. 1 Rio Bravo, Kern Co.	1-30-25	7,684	sd. sh. drlg.
Shell Oil Co., No. 1 Stevens, Kern Co.	29-30-26	7,888	reaming 7,497
Round Mountain Oil Co., No. 2 Round Mountain, Kern	19-28-29	1,913	bailing
Shell Oil Co., No. 4 Round Mountain, Kern Co.	7-28-29	1,955	pump 437 b.d.
Shell Oil Co., No. 5 Round Mountain, Kern Co.	7-28-29	1,548	wtr. broke in
Shell Oil Co., No. 6 Round Mountain, Kern Co.	7-28-29	1,630	completing
Shell Oil Co., No. 7 Round Mountain, Kern Co.	7-28-29	1,750	completing
Shell Oil Co., No. 8 Round Mountain, Kern Co.	7-28-29	....	rigging up
Shell Oil Co., No. 9 Round Mountain, Kern Co.	7-28-29	....	bldg. rig
Shell Oil Co., No. 10 Round Mountain, Kern Co.	7-28-29	....	bldg. rig
Honolulu Oil Corp., No. 17 Round Mountain, Kern Co.	18-28-29	2,106	pump. 573 b.d.
Honolulu Oil Corp., No. 18 Round Mountain, Kern Co.	18-28-29	1,885	cmtd.
Honolulu Oil Corp., No. 19 Round Mountain, Kern Co.	20-28-29	....	bldg. rig
Benito Huntington Oil, No. 1 Round Mountain, Kern	8-28-29	....	bldg. rig
Jergins Trust, No. 20 Edison, Kern Co.	13-30-29	1,468	O.S. drlg.
Jergins Trust, No. 22 Edison, Kern Co.	22-30-29	4,050	cleaning out
Jergins Trust, No. 24 Edison, Kern Co.	23-30-29	....	rigging up
Jergins Trust, No. 25 Edison, Kern Co.	14-30-29	....	bldg. rig
Buffalo Oil Co., No. 2 Edison, Kern Co.	24-30-29	1,181	run liner
Wood-Callahan Oil Co., No. 1 Edison, Kern Co.	23-30-29	....	rigging up
Wood-Callahan Oil Co., No. 2 Edison, Kern Co.	21-30-29	....	bldg. rig
Higgins, W. F., No. 1 Edison, Kern Co.	17-30-29	1,765	sd. sh. drlg.
M. & L. Oil Co., No. 1 Edison, Kern Co.	23-30-29	....	bldg. rig
General Pet., No. 15 Edison, Kern Co.	11-30-29	....	rigging up
General Pet., No. 16 Edison, Kern Co.	10-30-29	1,855	pump. 170 b.d.
General Pet., No. 17 Edison, Kern Co.	21-30-29	3,200	C.P. 3,137
The Texas Co., No. 8 Edison, Kern Co.	23-30-29	1,365	sd. sh. drlg.
Pioneer Holding Co., No. 2 Edison, Kern Co.	17-30-30	1,161	sd. sh. drlg.
General Pet. Corp., No. 1 Elk Hills, Kern Co.	5-30-24	6,149	P.B. 4,595
Bender, E. A., No. 1 San Emidio, Kern Co.	14-10-23	488	cleaning out
C. C. M. Oil Co., No. 28 Midway-Sunset, Kern Co.	28-32-23	....	bldg. rig
Gibson Oil Co., No. 5 Midway-Sunset, Kern Co.	8-11-23	....	rigging up
Gibson Oil Co., No. 6 Midway-Sunset, Kern Co.	6-11-23	1,890	sd. sh. drlg.
Chief Oil Co., No. 3 Midway-Sunset, Kern Co.	6-11-23	....	bldg. rig
General Pet. Corp., No. 61 Midway-Sunset, Kern Co.	24-31-23	1,199	sd. sh. drlg.
General Pet. Corp., No. 2 Midway-Sunset, Kern Co.	6-11-23	1,176	sd. sh. drlg.
General Pet. Corp., No. 15-B Midway-Sunset, Kern Co.	6-11-23	....	bldg. rig
Shell Oil Co., No. 1 Midway-Sunset, Kern Co.	7-11-23	2,794	cmtd. 2,682
Hoyt, Otis, No. 1 Midway-Sunset, Kern Co.	7-11-23	1,692	sd. sh. drlg.
Bankline Oil Co., No. 1 Midway-Sunset, Kern Co.	6-11-23	2,550	sd. sh. drlg.
Standard Oil Co., No. 25 Midway-Sunset, Kern Co.	36-12-24	2,585	O.S. drlg.
Standard Oil Co., No. 30 Midway-Sunset, Kern Co.	31-12-23	3,364	sd. sh. drlg.
Standard Oil Co., No. 65 Midway-Sunset, Kern Co.	36-12-24	2,160	pump. 50 b.d.
Standard Oil Co., No. 4 Midway-Sunset, Kern Co.	5-11-23	2,690	cmtd. 2,688
Standard Oil Co., No. 203 Midway-Sunset, Kern Co.	5-11-23	....	bldg. rig
Standard Oil Co., No. 219 Midway-Sunset, Kern Co.	33-32-24	....	bldg. rig
Quality Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,985	cmtd. 1,620
Santa Cerritos Oil Co., No. 1 Midway-Sunset, Kern Co.	23-32-23	....	rigging up
Berry Holding Co., No. 23 Midway-Sunset, Kern Co.	34-12-24	970	sd. sh. drlg.
Alford Oil Co., No. 5 Midway-Sunset, Kern Co.	4-32-23	3,300	sd. sh. drlg.
Fairfield, F. E., No. 1 Midway-Sunset, Kern Co.	23-32-23	....	bldg. rig
The Texas Co., No. 15 Midway-Sunset, Kern Co.	32-32-24	....	rigging up
Obispo Oil Co., No. 12 Midway-Sunset, Kern Co.	32-12-23	2,572	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Jerman, R. W., No. 1 Midway-Sunset, Kern Co.	31-12-23	4,128	P.B. 3,350
Ohio Oil Co., No. 7 Buena Vista Lake, Kern Co.	5-32-26	....	rigging up
Ohio Oil Co., No. 1 Tejon, Kern Co.	36-11-19	985	sd. sh. drlg.
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	33-11-19	6,032	swabbing
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	5,789	hd. sd. drlg.
Conlon, J. M., No. 1 Coalinga, Fresno Co.	30-19-15	1,120	sd. sh. drlg.
Standard Oil Co., No. 1 South Coalinga, Fresno Co.	36-21-14	1,700	sd. sh. drlg.
Union Oil Co., No. 1 Lillis-Welsh, Fresno Co.	24-21-16	11,127	P.B. 10,729
K. N. D. A., No. 2 Kettleman North, Fresno Co.	20-21-17	3,210	will cmt.
K. N. D. A., No. 38 Kettleman North, Fresno Co.	18-21-17	3,372	sd. sh. drlg.
K. N. D. A., No. 74 Kettleman North, Fresno Co.	30-21-17	7,163	br. sh. drlg.
K. N. D. A., No. 81 Kettleman North, Fresno Co.	24-21-16	....	rigging up
K. N. D. A., No. 36 Kettleman North, Kings Co.	36-22-18	9,732	P.B. 9,065
Standard Oil Co., No. 25 Kettleman North, Fresno Co.	19-21-17	6,560	hd. sh. drlg.
Standard Oil Co., No. 43 Kettleman North, Fresno Co.	19-21-17	4,990	sd. sh. drlg.
Standard Oil Co., No. 56 Kettleman North, Fresno Co.	19-21-17	5,691	sd. sh. drlg.
Standard Oil Co., No. 65 Kettleman North, Fresno Co.	19-21-17	7,540	br. sh. drlg.
Standard Oil Co., No. 72 Kettleman North, Fresno Co.	19-21-17	7,381	br. sh. drlg.
Standard Oil Co., No. 2 Kettleman Middle, Kings Co.	29-23-19	8,828	dry; abd.
Standard Oil Co., No. 3 Kettleman Middle, Kings Co.	19-23-19	....	bldg. rig
Kettleman View Oil Co., Well No. 1, Kings Co.	29-22-19	1,629	recmt. 1,451
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings	21-22-20	2,495	hd. sh. drlg.
Pismo Pet. Corp., No. 2 Pismo, San Luis Obispo Co.	5-32-13	....	bldg. rig
United Oil Co., No. 1 Panorama, San Luis Obispo Co.	2-32-21	210	sd. sh. drlg.
Taft Well Drlg. Co., No. 1 Pismo, San Luis Obispo Co.	31-31-13	3,598	br. sh. drlg.
Martin, J. D., No. 4 Pismo, San Luis Obispo Co.	5-32-13	2,230	sd. sh. drlg.
Martin, J. D., No. 5 Pismo, San Luis Obispo Co.	5-32-13	1,990	sd. sh. drlg.
Birch-Royer Oil Co., No. 1 Pismo, San Luis Obispo Co.	31-31-13	1,798	sd. sh. drlg.
Jergins Trust, No. 1 Pismo, San Luis Obispo Co.	5-32-13	....	rigging up
Barnsdall Oil, No. 1 Carissa Plains, San Luis Obispo	24-28-17	3,559	sd. sh. drlg.
Bacon, E. D., No. 1 Carissa Plains, San Luis Obispo Co.	22-31-21	275	sd. sh. drlg.
Burch, I. L., No. 1 Cuyama, San Luis Obispo Co.	4-10-26	252	sd. sh. drlg.
Holly Dev. Co., No. 1 Tracy, San Joaquin Co.	16- 2-5	4,152	dry; abd.
Standard Oil Co., No. 1 McDonald Island, San Joaquin	25- 2-4	5,224	shows gas
Pure Oil Co., No. 3 Chowchilla, Madera Co.	17-10-14	1,171	sd. sh. drlg.
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	7,526	reaming
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	8,974	sd. sh. drlg.
Hillman & Anderson, No. 1 Parkfield, Monterey Co.	15-24-14	....	bldg. rig
The Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	4,357	fish. D.P.
Amerada Pet. Co., No. 1 Emigh, Solano Co.	26- 4-2	3,792	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location:	S.T.R.	Depth	Status
Republic Pet. Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	7,477	flow. 300 b.d.
Marvin, J. L., No. 1 El Segundo, Los Angeles Co.	7- 3-14	7,440	sd. sh. drlg.
Ohio Oil Co., No. 1 El Segundo, Los Angeles Co.	7- 3-14	....	bldg. rig
Signal Finance, No. 1 Hawthorne, Los Angeles Co.	10- 3-14	3,841	rigging up
Shell Oil Co., No. 1 Monets, Los Angeles Co.	33- 3-14	7,352	dry; abd.
Brown, R. A., No. 1 Torrance, Los Angeles Co.	31- 3-14	836	cmtd. 831
White Five Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,885	P.B. 3,700
White Five Oil Co., No. 2 Torrance, Los Angeles Co.	31- 3-14	....	material
Walsh Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Pongratz Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Linderman, G. K., No. 2 Torrance, Los Angeles Co.	31- 3-14	....	rigging up
Regent Oil Co., No. 1 Torrance, Los Angeles Co.	6- 4-14	2,997	cmtd. 2,992
Sterling Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	4,200	redrig. 1,159
Roach, W. C., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,512	O.S. drlg.
Walken Oil Co., No. 1 Torrance, Los Angeles Co.	5- 4-14	3,200	sd. sh. drlg.
Dumas-Brown Oil Co., No. 1 Torrance, Los Angeles	6- 4-14	2,765	sd. sh. drlg.
Dumas-Lewis Oil Co., No. 2 Torrance, Los Angeles	6- 4-14	....	rigging up
B. & N. Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	3,369	cleaning out
Langstaff Pet. Corp., No. 1 Torrance, Los Angeles Co.	31- 3-14	60	tech. spud
Lawler Pet. Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	2,791	sd. sh. drlg.
Macvan Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,741	sd. sh. drlg.
Redondo Oil Corp., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,130	cmtd. 3,125
Alleghany Pet. Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	rigging up
Petrol Corp., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,552	cleaning out
Tu-Jax Oil Co., No. 1 Torrance, Los Angeles Co.	32- 3-14	3,343	O.S. drlg.
Southwestern Pet. Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	....	bldg. rig
Continental Royalties, No. 1 Torrance, Los Angeles Co.	32- 3-14	....	rigging up
Rennek Oil & Gas Co., No. 1 Torrance, Los Angeles Co.	5- 4-14	3,448	cleaning out
Rennek Oil & Gas Co., No. 2 Torrance, Los Angeles Co.	5- 4-14	1,120	sd. sh. drlg.
C. C. M. Oil Co., No. 23 Torrance, Los Angeles Co.	8- 4-14	5,050	cleaning out
West American Oil Co., No. 1 Domingues, Los Angeles	3- 4-13	8,358	cmtd. 6,242
Crude Oil Drlg. Co., No. 1 Gardena, Los Angeles Co.	31- 3-13	....	bldg. rig
Union Oil Co., No. 8 Domingues Carson, Los Angeles	33- 3-13	6,820	sd. sh. drlg.
Barnsdall Oil Co., No. 16 Rosecrans, Los Angeles Co.	18- 3-13	4,955	redrig. 4,565
Republic Pet. Co., No. 1 Rosecrans, Los Angeles Co.	18- 3-13	....	bldg. rig
Mars Oil Co., No. 1 Athens, Los Angeles Co.	7- 3-13	3,968	milling
Associated Oil Co., No. 18 Seal Beach, Los Angeles Co.	11- 5-12	5,882	sd. sh. drlg.
Continental Oil Co., No. 39 Seal Beach, Los Angeles Co.	3- 5-12	....	bldg. rig
Standard Oil Co., No. 27 Seal Beach, Los Angeles Co.	3- 5-12	6,018	form. test
Eastern Oil Co., No. 1 Del Rey, Los Angeles Co.	22- 2-15	7,375	O.S. drlg.
Deuel, W. E., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Union Oil Co., No. 22 Del Rey, Los Angeles Co.	27- 2-15	4,961	sd. sh. drlg.
Yant Pet. Corp., No. 1 Newhall, Los Angeles Co.	1- 3-16	2,024	cleaning out
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co.	34- 4-17	....	grade road
Jones & Co., No. 1 Newhall, Los Angeles Co.	36- 4-17	....	bldg. rig
Pomaco Royalty Co., No. 1 Palos Verdes, Los Angeles	1- 5-14	....	bldg. rig
Harbor Pet. Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,097	sd. sh. drlg.
Hull, James, No. 1 Wilmington, Los Angeles Co.	20- 4-13	....	bldg. rig
Cidro Oil Co., No. 1 Wilmington, Los Angeles Co.	29- 4-13	3,568	pump. water
General Pet. Corp., No. 1 Wilmington, Los Angeles Co.	4- 5-13	2,420	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topango Canyon, Los Angeles	5- 1-16	1,486	sd. sh. drlg.
Standard Oil Co., No. 79 Montebello, Los Angeles Co.	2- 2-12	6,450	P.B. 3,715
Standard Oil Co., No. 81 Montebello, Los Angeles Co.	2- 2-12	3,950	completing
Standard Oil Co., No. 82 Montebello, Los Angeles Co.	2- 2-12	7,886	hd. sh. drlg.
Standard Oil Co., No. 85 Montebello, Los Angeles Co.	2- 2-13	....	material
Universal Consd., No. 6 Montebello, Los Angeles Co.	5- 2-11	5,572	cmtd. 5,380
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	6,352	deepening
Richfield Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	5,992	hd. sd. drlg.
Richfield Oil Co., No. 2 Montebello, Los Angeles Co.	5- 2-11	5,097	hd. sd. drlg.
North American, No. 2 Montebello, Los Angeles Co.	5- 2-11	5,896	sd. sh. drlg.
St. Helens Pet. Co., No. 7 Montebello, Los Angeles Co.	5- 2-11	4,300	hd. sd. drlg.
Oil & Gas Associates, No. 1 Pico, Los Angeles Co.	9- 2-11	4,281	sd. sh. drlg.
Bernstein, M. E., No. 1 Artesia, Los Angeles Co.	26- 3-12	5,888	redrig. 4,800
McVicar & Rood, No. 1 San Jose Hills, Los Angeles Co.	6- 2-9	1,494	sd. sh. drlg.
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	36- 5-5	2,510	hd. sd. drlg.
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	2,130	bailing
Terry, George, No. 1 Westminister, Orange Co.	17- 5-11	4,096	sd. sh. drlg.
Hillman & Long, No. 1 Westminister, Orange Co.	14- 5-11	7,701	cmtd. 5,557
B. A. L. Oil Co., No. 1 Huntington, Orange Co.	36- 5-11	1,797	sd. sh. drlg.
West American Oil Co., No. 1 East Coyote, Orange Co.	24- 3-10	....	rigging up
Union Oil Co., No. 22 Chapman Richfield, Orange Co.	30- 3-9	....	rigging up
Union Oil Co., No. 29 Chapman Richfield, Orange Co.	30- 3-9	3,380	sd. sh. drlg.
Union Oil Co., No. 31 Chapman Richfield, Orange Co.	30- 3-9	3,257	cmtd. 3,241
Union Oil Co., No. 32 Chapman Richfield, Orange Co.	30- 3-9	1,991	sd. sh. drlg.
Continental Oil Co., No. 1 Yorba, Orange Co.	21- 3-9	4,796	dry; abd.
Tehama Pet. Co., No. 2 Kraemer, San Bernardino Co.	33- 2-8	411	sd. sh. drlg.
Tehama Pet. Co., No. 3 Kraemer, San Bernardino Co.	3- 3-8	280	sd. sh. drlf.
Tehama Pet. Co., No. 4 Kraemer, San Bernardino Co.	32- 2-8	50	hd. sd. drlg.
Equitable Pet. Co., No. 1 Wildcat, San Bernardino Co.	11-10-5	2,398	hd. sd. drlg.

KANSAS

Week Ending May 23. (Descriptions are East unless marked otherwise)

Barton County

Buchanan & Alexander No. 1 Langfeld. NE NE SW sec. 14-20-11w. K.C. 3,022 ft.; T.D. 3,299 ft.; pot. prod. 488 bbls.

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. S.D. 63 ft.

Davison et al No. 1 Birzer, SW SE SW sec. 22-17-12w. Anhydrite 760 ft.; Topeka 2,770 ft.; drlg. 2,810 ft.

G. H. Rose and W. H. Lant No. 1 Redetzke, NE NW NW sec. 1-16-11w. R.U.

Rose Spring Drlg. Co. et al No. 1 Rick, SW cor. sec. 1-19-11w. R.U.R.

Roy Ramsey et al No. 1 Hunt, NW cor. sec. 10-18-11w. Siliceous 3,382 ft.; T.D. 3,404 ft.; est. 25 bbls. oil per day. P.B. 3,402 ft.; acidized; no increase; P.B. 3,400 ft.; acidized.

Schermerhorn Oil Co. No. 1 Hunter, NE cor. sec. 29-18-15w. K.C. 3,194 ft.; La Motte; S.D. 3,486-87 ft.; est. 1,000,000 ft. of gas.

Torry & Feaster No. 1 Feist, NE NE SE sec. 29-18-11w. Siliceous lime 3,430-32½ ft.; T.D.; potential; pumped 346 bbls. oil in 18½ hrs.

Wakefield & Johnson No. 1 Bumm, SW SW NE sec. 22-19-12w. Anhydrite 665 ft.; drlg. 1,225 ft.

Butler County

Dalton et al No. 1 Miley, C SW NE sec. 17-27-5. R.U.

Ellis et al No. 1-A Pettit, SE SE NW sec. 21-28-6. Drlg. 2,150 ft.

McGinnis et al No. 1 Hinnen, NE NE SW sec. 18-24-4. Drlg. 760 ft.

Rex & Morris No. 1 Olson, NW SW SE sec. 15-28-6. Drlg. 400 ft.

Sanford et al No. 1 Weaver Est., SE SE NE sec. 11-28-5. Drlg. 2,772 ft.

Cowley County

Baden Prod. Co. No. 1 Sparks, SE SW NW sec. 35-33-4. Drlg. 1,687 ft.

Benedum-Trees No. 1 Carson, SW SW NW sec. 8-30-4. Drlg. 400 ft.

Craft et al No. 1 Whitson, NE NE NE sec. 20-33-4. Drlg. 50 ft.

DeGenther Oil Co. No. 1 Holt, NW NW SE sec. 15-30-5. R.U.

W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3. Drlg. 385 ft.

A. D. Morton et al No. 1 Roger, SE SE NE sec. 1-31-4. S.D. 423 ft.

Roth & Faurot No. 1 Guthrie, NW cor. Lot 14, sec. 30-33-8. H.F.W. 3,146 ft. P.B. 2,255 ft.

Cameron & Pulse No. 1 Simpson, C NE NW sec. 3-30-4. Drlg. 415 ft.

Wakefield et al No. 1 Daniels, SE SW SE sec. 3-30-3. Drlg. 2,152 ft.

Decatur County

Winkler & Koch No. 1 Veasey, C NW SE sec. 26-3-26w. B.R.

Edwards County

Stanolind O. & G. Co. et al No. 1 Donovan, C SE SE sec. 14-26-18w. Anhydrite 1,167 ft.; K.C. 4,028 ft. (cor.); R.U.S.T. 4,055 ft.

Ellis County

Albec Oil Co. No. 1 Union Pacific, NE cor. sec. 9-13-20w. Drlg. 2,390 ft.

Bradley Oil Co. et al No. 1 Penney-Wann, SE cor. sec. 13-15-20w. W.O.C. 48 ft.

James Brouk et al No. 1 Jacoba, NW NW SE sec. 31-15-16w. Rig.

Empire O. & R. Co. No. 1 Herl, SE cor. sec. 22-15-19w. Drlg. 860 ft.

Bridgeport Machine Co. et al No. 1 Madden Est., NE NW NW sec. 26-15-18w. Anhydrite 1,150 ft.; U.R. 2,795 ft.

Brunson & Ewers-Simpson No. 1 Gross. NE NE SW sec. 29-14-17w. Anhydrite 1,110 ft.; Topeka 2,960 ft.; Oswald 3,244-46 ft.; drlg. 3,420 ft.

Harris & Haun et al No. 1 Schmeidler, SE SE SW sec. 3-13-17w. Drlg. 2,365 ft.

Jones & Shelbourne No. 1 Gunther, SE SE SW sec. 9-11-19w. R.U.

Jones Bros. & Carpenter et al No. 1 Solomon, SE SE SW sec. 28-11-19w. Anhydrite 1,408 ft.; drlg. 3,105 ft.

Lario Oil & Gas et al No. 1 **Walter, SE** NE SW sec. 3-12-18w. Anhydrite 1,314 ft.; Topeka 3,060 ft.; T.D. 3,165 ft.; acidized; pot. 1,159 B.P.D.; comp.

Muth et al No. 1 **Penney, SW SW SE sec. 29-14-18w. M.I.M.**

Tom Palmer No. 1 Schoenthaler, NE NE NW sec. 31-12-19w. Oswald 3,370 ft.; cg. 3,965 ft.; drlg. 3,781 ft.

Parrish & Denman No. 1 Walter, SE SW SE sec. 14-13-17w. Set 15-in. csg.; T.D. 460 ft.

J. E. Trigg et al No. 1 Armbrister, SE SE SW sec. 6-11-19w. M.I.M.

Twin Drlg. Co. No. 1 Copeland, NE NE SW sec. 26-14-19w. Anhydrite 1,350 ft.; drlg. 2,305 ft.

Twin Drlg. Co. et al No. 1 Schmidt, SW SW SE sec. 22-15-17w. Rig.

Vickers Pet. Co. No. 1 Kraus, SW SW NW sec. 22-14-19w. Rig.

Wolf Creek Oil Co. et al No. 1 Polifka, SW SW NE sec. 24-13-18w. Cellar.

Yarnell & Carlson No. 1 Phillip, NW NW SE sec. 2-14-18w. Anhydrite 1,227 ft.; U.R. 2,840 ft.

Ellsworth County

York State Oil Co. No. 1 Koestle, NW NW SE sec. 12-17-9w. Loc.

Finney County

Helmerich & Payne No. 1 Jones, C SE sec. 34-26-34w. Rig.

Lone Star State Drlg. Co. No. 1 Hamlin, SW SW NE sec. 31-24-34w. Set 6-in. csg. 2,418 ft.; drlg. 2,451 ft.

Graham County

Vickers Pet. Co. & Phillips Pet. Co. No. 1 Hutton, NE NE SE sec. 29-8-22w. Anhydrite 1,805 ft.; T.D. 3,075 ft.; U.R.

Greenwood County

Hale & Reese No. 1 Needles, NE SE NW sec. 12-25-10. S.D. 285 ft.

Ward McGinnis No. 1 Dater, NW NW SW sec. 11-24-8. Miss. L. 2,570-2,600 ft.; D.&A.

Ward McGinnis No. 1 Lampe, NW NE SW sec. 26-24-8. R.U.

Harper County

Marathon Oil Co. No. 1 Zellers, C SW NW sec. 17-35-8w. Wilcox sand 5,320 ft.; S.O. and gas, salty taste; T.D. 5,410 ft.; fsg.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Fsg. 3,875 ft.

Haskell County

Helmerich & Payne et al No. 1 Larson, C SE sec. 28-28-33w. Rig.

Helmerich & Payne No. 1 Meredith, C SW sec. 10-30-33w. Loc.

Kuhn Brothers et al No. 1 Nilson, SW SW SE sec. 21-28-32w. Set 10-in. csg. 604 ft.

Kingman County

D. R. Lauck et al No. 1 Prather, C SE sec. 18-27-8w. Drlg. 320 ft.

D. R. Lauck et al No. 1 Skilling, C E½ E½ SW sec. 33-27-8w. O.W.D.D.; drlg. 4,533 ft.

Oklahoma Oil Corp. et al No. 1 Reeves, NW cor. sec. 29-27-5w. Set 12-in. csg. 201 ft.; W.O.C. 220 ft.

McPherson County

Empire Oil & Ref. Co. No. 1 Cunningham, SE cor. sec. 26-18-1w. Drlg. 2,695 ft.

Hawkins et al No. 1 Ritikofer, NE NE SE sec. 2-20-10w. Cellar.

T. C. Johnson, et al No. 1 A. R. Johnson, SW SW NW sec. 33-17-1w. Drlg. 790 ft.

Ness County

Continental Oil Co. No. 1 Thompson, C E½ E½ SW sec. 13-18-26w. Siliceous and S.O. 4,446-50 ft.; set 7-in. csg. 4,445 ft.

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. M.I.M.

Reno County

Cheney et al No. 1 Moore, NE cor. sec. 14-26-8w. K.C. 3,308 ft.; Siliceous 4,400 ft.; T.D. 4,425 ft.; D.&A.

Dickey Oil Co. No. 1-A Shepherd, NE NE NW sec. 22-26-9w. Chat 3,870 ft.; wtr., 4,161 ft.; P.B. 4,156 ft.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. S.O. 2,874 ft.; H.F.W. 2,935 ft.; S.D. 2,948 ft.

Graham et al No. 1 Miller, NE NE SE sec. 36-25-10w. Bldg. rig.

Miller et al No. 1 Detter, NE SE NW sec. 28-22-7w. Spudded and S.D.

Rose Spring Drlg. Co. No. 1 Swansen, NE NE NW sec. 1-23-5w. R.U.

Rice County

Beardmore et al No. 1 Fuller, SW SW SE sec. 23-18-7w. Drlg. 2,700 ft.

Day No. 1 Mason, NW NE NE Sec. 23-21-7w. Chat 3,388-3,400 ft.; acidized; pumped 133 bbls. in 5 hrs.; C.O.

Dickey Oil Co. and **Continental Oil Co.** No. 1 Newkirk, NE NE SW sec. 11-18-7w. Simpson 3,179 ft.; drlg. 3,272 ft.

Duwe & Schneider No. 1 Wright, NE cor. sec. 36-21-7w. K.C. 2,925 ft. H.F.W. 3,055 ft.; drlg. 3,206 ft.

Glimac Oil Co. No. 1 Sargent, SE cor. sec. 31-18-6w. Set 10-in. csg. 1,620 ft.

Grattan et al No. 1 Williams, SW SW NW sec. 17-18-7w. K.C. L. 2,818 ft.; cg. 3,202 ft.; H.F.W. 3,207 ft.; T.D. 3,363 ft.

Gulf Oil Corp. No. 1 Steckel, SW cor. sec. 30-19-16w. Set 10-in. csg. 150 ft.

Permian Oil Co. No. 1 Monroe, C NE NE sec. 9-20-7w. Set 10-in. csg. 2,114 ft.; S.D. 2,605 ft.

Sage et al No. 1 Patton, SW cor. sec. 5-21-7w. Rig.

Shell Pet. Corp. et al No. 1 Hafermann, C N½ N½ SE sec. 6-19-9w. Drlg. 2,150 ft.

Shell Pet. Corp. No. 1 Maughlin, NE NW SE sec. 11-20-8w. Drlg. 2,960 ft.

Simpson & Noble et al No. 1 Pulliam, C S½ N½ NE sec. 35-19-8w. H.F.W. 2,735-55 ft.

Simpson & Noble and Stanolind O. & G. Co. No. 1 Bowman, SW SW NW sec. 22-19-10w. R.U.R.

Skiles et al No. 1 Stout, SE cor. sec. 6-21-9w. Drlg. 2,468 ft.

Rooks County

Hartman & Blair et al No. 1 Hall, NW cor. sec. 25-10-17w. Rigging up.

Helmerich & Payne et al No. 1 Bedard, C NE sec. 29-9-19w. Rig.

L. C. D. Drlg. Co., et al No. 1 Westhusin, C NE SE sec. 11-9-17w. Bldg. rig.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. Drlg. 1,470 ft.

Murfin et al No. 1 Wasthusin, NE NE SE sec. 19-9-16w. Drlg. 2,952 ft.

J. A. Shoemake No. 1 Stebbins, NE NE SW sec. 26-7-17w. Loc.

Skaer Oil Corp. et al No. 1 Dryden, NE cor. sec. 28-10-17w. Drlg. 2,000 ft.

Trees Oil Co. No. 1 Minx, SW cor. sec. 31-10-18w. Location.

Rush County

Boyle & Grossman No. 1 Wilson, NE cor. sec. 33-17-19w. Drlg. 1,430 ft.

Ira Keith et al No. 1 Dartmouth Savings Bank, SW SW NE sec. 3-17-18w. Oswald 3,335 ft.; R.U.S.T. 3,346 ft.

National Refining Co. No. 1 Werth, NW NE NE sec. 7-16-18w. Anahydrite 1,195 ft.; Oswald 3,328 ft.; T.D. 3,572 ft.; est. 50 B.D.

Pryor & Lockhart et al No. 1 Stegman, SW NW NE sec. 11-16-17w. Anhydrite 1,095 ft.; drlg. 1,435 ft.

Rose Spring Drlg. Co. et al No. 1 Jacoba, SW SE NW sec. 8-16-17w. LaMotte sd. 3,570-72 ft.; drlg. 3,581 ft.; H.F.W.

Russell County

Armer et al No. 1 Maier, NE NW NE sec. 20-15-14w. Loc.

R. G. Berry et al No. 1 Cook, NE NE SE sec. 19-11-13w. Oswald 3,097 ft.; conglomerate 3,412 ft.; S.D. 3,517 ft.

Central Pet. Co. No. 1 Furthmeyer, NE cor. sec. 28-14-15w. Anhydrite 838 ft.; Oswald 3,023 ft.; Siliceous 3,228 ft.; Granite Wash 3,266 ft.; drlg. 3,300 ft.

Darby Petroleum Corp. and Continental Oil Co. No. 1 Letsch, SE NE NW sec. 34-14-13w. Granite wash 3,238 ft.; granite 3,262-65 ft.; P.B.

Eisenhour & Shaffer No. 1 Humes, SW SW SW sec. 6-14-12w. S.D. 3,336 ft.

Hartman & Blair No. 1 Johnston, NW cor. sec. 11-13-14w. R.U.

Hartman & Blair No. 1 McAllister, SW SW SE sec. 24-13-15w. Anhydrite 940 ft.; drlg. 1,195 ft.

Lario Oil & Gas Co. et al No. 1 Steinert, NE NE SW sec. 21-15-15w. R.U.

Stearns & Streeter et al No. 1 John Hancock Ins. Co., SE SW SW sec. 31-12-14w. Topeka 2,567 ft.; Oswald 2,845 ft.; drlg. 3,130 ft.

R. C. Tarrant No. 1 Williamson, SE SE NW sec. 9-14-14w.
Tarkio lime 2,515 ft.; T.D. 2,550 ft.; swbd. 5 bbls. oil per hr., and showing of wtr.; acidized with 1,000 gals.; made potential of 248 bbls. of oil.

P. G. Reynolds No. 1 Fredrickson, SE SW SE sec. 6-13-12w. Oswald 2,987 ft.; set 6-in. csg. 3,017 ft.; T.D. 3,170 ft.

Wakefield et al No. 1 Krug, NE NW SW sec. 7-15-14w. Anhydrite 845 ft.; drlg. 1,215 ft.

Saline County

James Brouk et al No. 1 Otheiander, NE NW SE sec. 10-16-3w. Bldg. rig.

Sedgwick County

Joe Aylward et al No. 1 Harrison, SE SE SW sec. 23-25-2. Drlg. 985 ft.

Dickey Oil Co. No. 1 Ayers, SW SW NW sec. 12-27-2. Chat 2,886 ft.; drlg. 3,040 ft.

D. R. Lauck No. 1 Parke, SE SE NE sec. 17-25-2. Drlg. 2,100 ft.

Seward County

Helmerich & Payne No. 1 Hyde, C SW sec. 14-31-34w. M.I.M.

Stafford County

Stanolind O. & G. Co. and Atlantic Oil Prod. Co. No. 1 Shotton, SW cor. sec. 27-22-13w. Anhydrite 735 ft.; K.C. 3,430 ft.; Viola 3,726 ft.; Siliceous 3,846 ft.; H.F.W. 3,862-78 ft.; D.&A.

Sumner County

Craft & Wilson No. 1 Nevitt, NE NW NE sec. 36-32-2e. Stalnaker 2,223 ft.; K.C. L. 2,608 ft.; S.O. 2,772-83 ft.; drlg. 3,109 ft.

Helmerich & Payne et al No. 1 Elwell, NW NW NE sec. 18-34-1. Chat 3,867 ft.; S.D. 4,000 ft.

D. L. Husted et al No. 1 Evers, SE SE NE sec. 27-31-2. Set 12-in. csg. 412 ft.

Matthews & Derrington No. 1 Berry, NW NW SE sec. 14-35-1. S.G. 2,187 ft.; S.D. 2,785 ft.

Pryor & Lockhart et al No. 1 Knowles, SW cor. sec. 30-30-1. K.C. L. 2,858 ft.; Chat 3,499 ft. (cor.); H.F.W. 3,499-3,-500 ft.

E. B. Shawver No. 1 Judd, SW SE NE sec. 3-34-2. R.U.

Texas Co. No. 1 Reed, NE SE SE sec. 11-31-1w. Fsg. 564 ft.

Wilcox O. & G. Co. et al No. 1 Hess, SE SE NW sec. 13-34-2w. Chat 4,120 ft.; S.G. 4,120-50 ft.; drlg. 4,451 ft.

D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW sec. 15-35-1w. Drlg. 4,207 ft.

Trego County

Central Commercial's No. 1 Wagg, NW NW SE sec. 17-13-21w. K.C. lime 3,548 ft.; bailed 10 bbls. oil in 8 hrs. at 3,950 ft.; drlg. 4,019 ft.

J. J. Hall et al No. 1 Deines, SE SE SE sec. 12-13-24w. Drlg. 20 ft.

R. B. McNeely et al No. 1 Lemke, NW NW SW sec. 7-11-22w. Rotary rig.

Woodson County

N C. Dunn No. 1 Dawson, C NW NE sec. 27-26-13. L. 1,505 ft.; T.D. 1,527 ft.; P.B. 1,200 ft.; H.F.O.; no test.

Foster et al No. 1 Timm, SE NW NE sec. 36-25-13. S.O. 602-07 ft.; H.F.W. 612 ft., T.D.; P.B. 607 ft.; S.D.

C. L. Sheedy No. 1 Abbott, NE NE SW sec. 16-25-14. Spudded.

C. L. Sheedy et al No. 1 Fuhlhage, NE NW SW sec. 27-25-14. M.I.M.

Osage County

Champlin Ref. Co. No. 1 Osage, SW SW NE sec. 35-25-6. Drlg. 2,655 ft.

Elfred Beck No. 1 Osage, SE SE NE sec. 16-23-7. H.F.W. 2,615-40 ft.; S.D. 2,-640 ft.

Gray & Folson No. 1 Osage, SW SW NE sec. 33-25-7. S.D. 555 ft.

Midco Oil Corp. et al No. 1 Osage, NW NW SE sec. 11-23-6. Drlg. 2,440 ft.

Stoner Bros. No. 1 Osage, NW NE SW sec. 18-22-8. B.R.

Payne County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Pratt, SE cor. sec. 29-19-5. T.D. 171 ft.; W.O.C.

Denver Producing & Ref. Co. et al No. 1 Pratt, NW cor. sec. 20-18-3. Drlg. 2,502 ft.

Pontotoc County

Sandback et al No. 1 Sands, NE NE NE sec. 20-3-5. Drlg. 525 ft.

Southard & Miller No. 1 Wilson, NW SE SW sec. 26-4-5. Spudded and S.D.

Pottawatomie County

Ross Oil Co. et al No. 1 Sparkman, SE NE sec. 33-8n-4e.
C.O. 3,915 ft.; shot at 3,871-90 ft.; swbd. 250 bbls. in 24 hrs.; acidized.

J. L. Shaw No. 1 Illinois Life, NW SE NW sec. 1-4-5. Drlg. 1,590 ft.

Seminole County

Ark Royalty Co. No. 1 Kiker, SE SE NE sec. 9-10-7. Spudded and S.D.

Feimlee & Nichaelson No. 1 Belford, SE NW NE sec. 15-9-8. Sd. 1,460-1,505 ft.; S.O.&G.; S.D. 1,680 ft.

Tom Phillips & Kinrow Drlg. Co. No. 1 Cheparney, SE SE NW sec. 7-6-7. Rig.

Washita County

L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w. T.D. 1,465 ft.; S.D.

OKLAHOMA

Week Ending May 23

NORTHERN OKLAHOMA

Beckham County

Jo-Gail Drlg. Co. No. 1 Gilliland, C NE NE sec. 33-8-26w. Cellar.

Cleveland County

Hall-Briscoe, Inc. No. 1 Fant, S.W SW NE sec. 27-10-2w. S.D. at 7,511 ft.

Asa Lee Mayes, Inc., No. 1 Parsons, SW SW SE sec. 30-9-1. T.D. 3,510 ft.; tools moved out, may make new contract.

Coal County

Shell Pet. Corp. No. 2 Hill, SE SE NW sec. 30-3-10. Hunton 5,280 ft.; Sylvan 5,355 ft.; Viola 5,448 ft.; S.O. 5,640-57 ft.; Bromide 5,560 ft.; McLish 5,720 ft.; sd. 6,275 ft.; drlg. 6,376 ft.

Garfield County

Herndon Drlg. Co. et al No. 1 Branson, SW SW SE sec. 23-24-3w. Drlg. 4,780 ft.

W. J. Sherry et al No. 1 Haken, NW NW SW sec. 32-20-10w. Miss. lime 5,960 ft.; whipstock 5,839 ft.; drlg. by 6,240 ft.

Stanolind O. & G. Co. et al No. 1 Brunken, SW SW NE sec. 32-23-4w. Top Dense 5,915 ft.; Dolomite 5,935 ft.; first Wilcox 5,975 ft.; second Wilcox 6,033 ft.; T.D. 6,051 ft.; hole filled with 3,200 ft. oil; swbd. 80 bbls. oil, 17 bbls. wtr. in 24 hrs.; drlg. 6,061 ft. in sd.

Garvin County

Charles E. Carter et al No. 1 Wood, NW SW SE sec. 5-4-3. O.W.D.D.; sd. 2,973 ft.; S.O. 2,975 ft., T.D.; to core.

McElreath & Suggett No. 1 Lasater, SE SE SW sec. 2-2-1w. Spudded.

Grady County

John Graham et al No. 1 Castleberry, SW SE NW sec. 8-5-7w. Moving in.

Hughes County

Blackwell Oil & Gas Co., No. 1 Long, SE NE NW sec. 29-9-9. Sand 1,215-35 ft.; T.D. 1,273 ft.; U.R. 12-in. csg.

M. H. Halsey No. 1-A Eustep, NW NW SW sec. 11-8-9.
Wapanucka 3,428 ft.; Cromwell 3,453 ft.; T.D. 3,454 ft.; 2 bailers wtr. an hr.; P.B. and shot, 3,030-45 ft.; est. 10,000,000 ft. of gas; P.B. to 3,412 ft.; re-shot.

George Orr et al No. 1 Morgan, NE SE SW sec. 6-7-9. Cellar and pits.

Phillips Pet. Co. No. 1 Eberle, NE NE SW sec. 12-5-9. Wapanucka 3,387 ft.; Cromwell 4,368 ft.; Mayes 5,160 ft.; Woodford 5,230 ft.; drlg. 5,297 ft.

Sinclair Prairie Oil Co. et al No 1 Wilkly, SW cor. sec. 23-9-8. Drlg. 1,410 ft.

Sivalls et al No. 1 Montgomery, NW SW NW sec. 7-9-9. Booch 2,950 ft.; Gilcrease 3,100 ft.; base Gilcrease 3,245 ft.; rmg.

Kay County

W. O. Allen No. 1 Fulton, SE cor. sec. 18-27-4. T.D. 1,095 ft.; S.D.

Kiowa County

Atlantic Oil Producing Co. No. 1 Ta-Home, NE NW NE sec. 24-7-16w. Drlg. 1,243 ft.

W. C. Adams et al No. 2-A Stone, C SE SE NE sec. 34-7-17w.
T.D. 1,193 ft.; machine moved out.

Beeler & Klein No. 1 Parrish, SE SE NW sec. 3-6-15w. R.U.

E. A. De Bolt et al No. 1 Burnett, NW SE NE sec. 30-7-20w. Location.

Joe Hooser No. 1 Sonamaker, SE SW SW sec. 24-7-21w. Drlg. 725 ft.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3-22. T.D. 1,555 ft.; S.D.

Lincoln County

Amerada Petroleum Corp. et al No. 1 Zimmerman, SW SW NE sec. 10-12-5. Drlg. 1,390 ft.

Logan County

W. N. Anthony and H. G. Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1. T.D. 5,285 ft.; P.B. 5,181 ft.; swdg. pipe.

McClain County

Arab Pet. Corp. No. 1 Autry, NW cor. sec. 16-7-3w. T.D. 8,775 ft.; cmtd. cavings.

McCurtain County

Louis Sikes No. 1 Mitchell, C NW SW sec. 12-9s-26. Spudded and S.D. for 30 days.

McIntosh County

S. E. Dieckman No. 1 K. McIntosh, SE cor. sec. 4-12-17. Sd. 130 ft.; S.W.

Indian Ty. Oil Co.'s No. 1 Tancred. 1,050 ft. S and 390 ft. E of C. Sec. 9-9-14. Wilcox 4,525 ft.; T.D. 4,536 ft.; rip csg. 2,710-12 ft.; 750,000 ft. gas; H.F.W.

Noble County

Continental Oil Co. No. 1 Pruitt, NW SE SW sec. 19-20-1w Oswego 4,388 ft.; Viola 4,972 ft.; T.D. 5,142 ft.; P.B. 5,-115 ft.; acidized; est. 4 bbls. oil, 30 bbls. wtr. daily; S.D.O.

Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Gillham, NE SE SE sec. 14-22-1. B.R.

Okfuskee County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Wells, SW SW NW sec. 7-11-7. Hunton 4,167 ft.; drlg. 4,275 ft.

Champlin Ref. Co. No. 1 Thompson, SW SW NW sec. 7-13-8. T.D. 1,147 ft.; R. U.R.

Manahan & Grisso No. 1 Dalton, SE SE SE sec. 36-10-8.
Senora sand 1,723 ft.; T.D. 1,763 ft.; flowed 75 bbls. oil first hour after shot; in 9 hrs.; lost 4 hrs. while cleaning out.

Oklahoma County

I. D. O'Shaughnessy, Inc. No. 1 Berlowitz, SE SW NE sec. 9-12-3w. R.U.R.

H. R. Hollenback et al No. 1 Cooper, NW NW NE sec. 15-11-1. Oswego, 5,435 ft. Hunton 5,857 ft.; Sylvan 5,998 ft.; Viola 6,093 ft.; Simpson 6,133 ft.; first Wilcox 6,232 ft.; second Wilcox 6,340-60 ft.; S.D. 6,375 ft.

Harmon County

Lionlko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. T.D. 2,263 ft.; S.D.

Jackson County

C. P. Burnham No. 1 Oliver, NW NW SE sec. 26-1-20w. Granite Wash 1,350 ft.; gas 500,000 ft.; T.D. 1,685 ft.; S.D.

John Dickson et al No. 1 W. B. Wright, NE NW SE sec. 19-1-19w. Drlg. 1,000 ft.

A. H. Jackman No. 1 fee. SW SW SW sec. 27-1s-24w. T.D. 2,685 ft.; fsg.

Pioneer Oil Co. No. 1 N. Rawls, SW NW NE sec. 26-1-20w. T.D. 26 ft.; S.D.

Universal Oil Co. No. 1 R. W Briscoe NW SW NE sec. 36-1s-20w. T.D. 3,004 ft.

Jefferson County

A. T. Campbell No. 1 Trout, SE NE NE sec. 6-8s-7w. Sd. 1,525-57 ft.; T.D. 2,-064 ft.; S.D.

Pearson et al No. 1 Douthitt, NE cor. sec. 24-6s-9w. R.U.R.

Johnston County

Equitable O. & G. Co. No. 1 Belisey, NE SW sec. 12-2s-4e.
Arbuckle lime 1,552 ft.; drlg. 1,938 ft. in lime.

Magnolia Pet. Co. No. 1 Green, NE cor. flowed 225 bbls. in 7 hrs., and 208 bbls. sec. 12-2s-7. Hunton 1,138 ft.; Sylvan 1,395 ft.; Viola 1,547 ft.; Bromide 1,932 ft.; Wilcox 2,530 ft.; T.D. 2,615 ft.; D.&A.

Moore & Wirick No. 1 Westheimer & Daube, SE NW NE sec. 19-3s-4e. T.D. 4,065 ft. in sh.; D.&A.

Love County

Amerada Pet. Corp.'s No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. T.D. 7,363 ft.; shot 93 times with perf. gun at 4,849-87 ft.; acidized, using 435-bbl. load; unable to recover load; S.D.; repairing swbg. machine.

J. B. Russell et al No. 1 Scott, SW SE SW sec. 29-8s-2e. T.D. 4,968 ft.; taking down tools.

Sinclair Prairie Oil Co.'s No 1 Stockton SE SE SW sec. 26-6s-2w. T.D. 3,556 ft.; rmg. core hole.

Marshall County

Helmerich & Payne No. 1 Taliaferro, NW SE SW sec. 26-5s-5e. Rig.

Pushmataha County

C. W. Whitehead et al No. 1 Misser, SE SW SW sec. 35-3s-18e. T.A.; T.D. 3,540 ft.

Stephens County

W. G. Endicott et al No. 1 McFatridge NW NW SW sec. 11-3s-9w. T.D. 1,362 ft.; S.D. for csg.

T. H. McCasland No. 1 J. C. Parker, NE NE SW sec. 2-1n-6w. S.D. 2,515 ft.; S.D.

Tillman County

G. Birnheim No. 1 Tate, NE NE NW sec. 16-1s-19w. Location.

Gulf Oil Corp. et al No. 1 McWilliams, NW SW SW sec. 15-3s-17w. Rig.

Gulf Oil Corp. No. 1 Wearmouth, SE NW SE sec. 31-1s-18w. T.D. 4,533 ft.; S.D.

Johnson, Young & Mitchell No. 1 Donahoe, SW NW NW sec. 7-4s-17w. Drlg. 1,368 ft.

Shirley, Clum et al No. 1 Moricle, NW NW SE sec. 16-4s-14w. Spudded.

D. S. Smith No. 1-A Hammill, NE NE NW NW sec. 6-5s-15w. T.D. 1,125 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

D. Malarnee et al No. 2-A DOK ranch, SE cor. sec. 35-2s-13e. O.W.D.D.; drlg. 3,230 ft.

Phelps & Coats et al No. 1 Fidelity Life Ins. Co., SE SW NW sec. 23-1s-12. Set 10-in. csg. 470 ft.; drlg. ahead.

Prairie Investment Co. No. 1 A. Cobb, SW NE NW sec. 19-3s-11e. R.U.

Riverland Oil Co. No. 1 Jones, SW SW NE sec. 4-3s-9e. Hunton 1,517 ft.; Sylvan 1,573 ft.; Viola 1,762 ft.; drlg. 1,840 ft.

Carter County

Carter Oil Co. No. 1 Carter-Williams, SW NE SW sec. 27-2s-2w. T.D. 3,105 ft.; flowed 3,309 bbls. first 24 hrs.; shut in.

Carter Oil Co. et al No. 1 Leon Voorhees, C SE SW sec. 34-5s-2w. Drlg. 5,742 ft.

W. E. Hammond No. 1 J. Rile, SW SE SE sec. 8-5s-1e. Drlg. 285 ft.

Texas Co. No. 1 Cathey, SE NE NE sec. 6-5s-1w. T.D. 4,191 ft.; pumping 20 bbls. daily, may deepen.

Cotton County

English Drlg. Co. No. 1 Wilson, NW NW SE sec. 7-4s-11w. T. D. 1,514 ft.; S.D.

ARKANSAS

Arkansas County

Ark. O. & G. Co. No. 3 Fischer, 250 ft. S, 200 ft. E, NW cor. NE NW sec. 6-4w. Rig; S.D. W.O.

Bradley County

Phillips Pet. Co. No. 1 C. H. Murphy et al, NW cor. NW NW sec. 12-17-11. Loc.

Calhoun County

Ben G. Barnett No. 1 Freeman Smith, SE cor. sec. 36-15-14. Set 10-in. 1,600 ft.; M.I big rig, 2,746 ft.

T. R. Brown et al No. 1 Calion Lbr. Co., C S½ SE SW sec. 22-15-15. Drk.

Clark County

Boris Tripanoff, tr., No. 1 W. Gibbons, sec. 27-8-18. Prep. to set csg. 557 ft.

Columbia County

J. C. Buckbee, Tr., No. 1 Wilson, 330 ft. N and E, C sec. 17-17-18. Cg. 3,410 ft.

Crawford County

Carter Oil Co. and Donald Trumbo No. 1 Cradduck, C NW NE sec. 3-11n-30w. Prep. set csg. 1,230 ft.

Dallas County

Kel-Mac Lease & Royalty Co. No. 2 R. Owens, NW cor. NW SW sec. 26-10-16. S.D. 1,580 ft.

Hempstead County

Dixie Drlg. Co. No. 1 Wheatley, 330 ft. S. 30 ft. E, NW cor. SW NE sec. 14-11-26. R.U. and W.O.O.

Fitzwater et al No. 2 Lafferty, C NW sec. 17-14-24. Tested S.W. and W.O. 2,180 ft.

Murdock-May & Easton No. 1 Conway est., 330 ft. N and E, SW cor. NW SW sec. 17-14-24. Set 12½-in. 80 ft.; drlg. 1,-750 ft.

LaFayette County

Earl F. Fox No. 2 Coleman Bros., NE NE sec. 30-16-24. S.D. 2,760 ft.

Erwin & Leach No. 2 Bodcaw Lbr. Co., 330 ft. S and E, NW cor. sec. 20-16-13. D.S. stuck 7,561 ft.

W. H. Harvey No. 1 R. F. Allen, NE cor. SE SE sec. 13-19-26. Abd. loc.

A. M. Neeley No. 1 Meek, 330 ft. S and W, NE cor. NE NW sec. 35-19-26. Loc.

Joe Modisett No. 1 Red River Lbr. Co., C SW SW sec. 21-19-14. Comp.; D.&A.; 6,009 ft.

Little River County

Roberts et al No. 1 Hall, sec. 22-13-29. O.W.D.D.; drlg. 1,920 ft.

Loanoke County

Frank F. Silver et al No. 1 Joe Chambers, C NE sec. 17-2n-7w. Drlg. 1,470 ft.

Miller County

Deep Rock Oil Corp. No. 1 Williams, NW cor. SW NW sec. 6-16-25. R.U.

Odell Hinson No. 1 Montana Realty Co., NE cor. NW NW sec. 3-17-28. Set 12½-in. csg. 238 ft.; S.D.O.

J. W. Jones et al No. 1 J. H. Bush, sec. 2-19-27. Loc. abd.

King Oil Corp. No. 1 G. W. Crank, SW NE sec. 19-16-25. S.D.; W.O. 3,906 ft.; King Oil Corp. No. 1 Mann, NW cor. NW SE sec. 2-16-26. Set 10-in. 200 ft.

M. L. Luckett No. 1 Beck, sec. 34-15-26. Drlg. 2,875 ft.

L. H. Mahon et al No. 1 Miller Land & Timber Co., SW cor. SE sec. 29-18-27. S.D. 1,345 ft.

McAlester Fuel Co. No. 1 J. N. Cook, sec. 18-20-27. Loc. abd.

Ouachita County

Carnes & Harrell No. 1 Dunn & Robinson, new loc., 440 ft. S, 440 ft. E, NW cor. NW SE sec. 7-12-19. Set 12½-in. csg. 180 ft.; S.D.

Edgar Johnson et al No. 1 J. M. Farris, 660 ft. N and 330 ft. E, SW cor. NE sec. 26-15-15. Loc.

Lion Oil Ref. Co. No. 1 Reynolds, C E½ SE NE sec. 28-15-15. Loc.
L. L. McDonald No. 1 Langley, 330 ft. N and E. SW cor. NE SW sec. 19-15-15. S.D. 2,116 ft.
Phillips Pet. Co. No. 1 Arnold, 660 ft. S and 330 ft. E, NW cor. NE sec. 27-15-15. Bldg. drk.
Phillips Pet. Co. No. 1 Cheatham, 660 ft. N and 330 ft. E, SW cor. NE sec. 27-15-15. Loc.
Phillips No 1 E. Gette, 660 ft. N and 330 ft. E, SW cor. NE sec. 27-15-15. R.U.
Phillips Pet. Co. No. 1 L. Harriss, 660 ft. N and 330 ft. W, SE cor. SW NE sec. 28-15-15. Loc.
Phillips Pet. Co. No. 1 Murphy, C E½ NE NE sec. 28-15-15. Loc.
John Pugh No. 1-A P. T. Hildebrand, 660 ft. N and 330 ft. W, SE cor. sec. 28-15-15. Loc.
J. D. Reynolds No. 1 McKenzie, 204 ft. S, 300 ft. W, NE cor. SE SW sec. 36-15-16. Fsg. for cable tools 1,970 ft.
Standard Oil Co. of La. No. 3-B Reynolds, 660 ft. N and 330 ft. W, SE cor. NW SW sec. 27-15-15. Drlg. 658 ft.
O. F. Whittaker, Tr., No. 1 S. Howard, 600 ft. E and 150 ft. N, SW cor. NW NE sec. 20-12-16. S.D. 1,840 ft.

Union County

Arkansas Southern Oil Co. No. 1 F. B. Laney, sec. 30-19-16. S.D. 175 ft.
Ark.-Southern Oil Co. No. 1 M. H. Simmons, NW cor. NW NE sec. 15-18-13. Drk.
J. C. Bucbee No. 1 Ezzell, SW cor. NE NW sec. 13-17-15. Cg. 3,885 ft.
J. E. Crosbie, Inc., No. 5 M. M. Sullivant, 393 ft. N and 341 ft. W, SE cor. SE NW sec. 12-17-14. Set 10-in. 180 ft.; W. O.S.R. 3,169 ft.
Kinnebrow & Simpson No. 1 L. Adams, SW cor. NE NE sec. 12-17-14. Drlg. 2,995 ft.
Marine Oil Co. No. 1 Simmons, 250 ft. S and W, NE cor. SE NW sec. 10-18-13. Drk.
McCrossien Oil Co. No. 2 D. Norman, NE cor. NE SE sec. 3-18-13. W.O. jack to pump. 3,556 ft.
Root Pet. Co. No. 1 E. V. White, C SE SW sec. 36-17-15. Tstd. 100,000 ft. gas at 2,246 ft.; abd.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

American Lib. O. Co. No. 1 Norton, 330 ft. S and 330 ft. W, NE cor. sec. 17-23-15. R.U.
W. D. Ambrose No. 1 Phillips, C Lot 7, Blk. 47, sec. 23-23-16. Loc.
Ark.-La. Gas Co. No. 13 Rodessa O. & L. Co., 2,330 ft. N and 1,136 ft. W, SE cor. sec. 22-23-16. Drlg. 1,380 ft.
Ark.-La. Gas Co. No. 15 Rodessa Oil & Land Co., NE cor. SW NW sec. 23-23-16. W.O.C. 6,001 ft.
Ark.-La. Gas Co. No. 16 Rodessa Oil & Land Co., SE cor. NE sec. 22-23-16. Set 10-in. 3,316 ft.; drlg. 5,610 ft.
Ark.-La. Gas Co. No. 17 Rodessa O. & L. Co., SE cor. SW NW sec. 23-23-16. Drlg. 3,112 ft.
Ark.-La. Gas Co. No. 18 Rodessa O. & L. Co., NW cor. sec. 23-23-16. Drlg. 224 ft.
Ark.-La. Gas Co. No. 19 Rodessa O. & L. Co., NE cor. NE SE sec. 22-23-16. Loc.
Ark.-La. Gas Co. No. 20 Rodessa O. & L. Co., NW cor. SW sec. 23-23-16. Loc.
Blackwell O. & G. Co. No. 1 Nugen cor. NE SE sec. 8-23-15. Cmtd. 7-in. 5,-916 ft.; T.D. 6,107 ft.
S. P. Borden No. 2 K.C.S., NW cor. SW sec. 23-23-16. Loc.
Canadian Oil Co. No. 1 Comegys, SE cor. sec. 10-23-16. Drlg. 3,750 ft.
Danciger O. & R. Co. No. 1 Francis heirs, C Lot 2, Blk. 10, sec. 23-23-16. Cmtd. 7-in. csg.; tstg.; T.D. 6,012 ft.
Danciger O. & R. Co. No. 1 J. F. Neugent, C Lot 3, Blk. 12, sec. 23-23-16. Perf. csg. 5,985-95 ft.; comp.; 6 B.P.H.; 2/16-in. tbg. ch.; T.D. 6,018 ft.
Duncan & Woods No. 1 Andrews, Lot 5, Blk. 21, sec. 23-23-16. Cmtd. 7-in. 6,-006 ft.; T.D. 6,022 ft.; tstg.
J. Edward Jones No. 1 Gibson, SW cor. SE SW sec. 22-23-16. Set 16-in. 250 ft.; drlg. 5,970 ft.
M. H. Marr et al No. 2 Peak, SW cor. SE sec. 11-23-16. Drlg. 5,290 ft.
R. W. Norton No. 3 Atkins Unit, 175 ft. S, 1,286 ft. W, NE cor. sec. 18-23-16. Drlg. 1,931 ft.
R. W. Norton No. 2 Elder, 330 ft. S and W, NE cor. sec. 23-23-16. Loc.
R. W. Norton No. 2 Fosque Unit, SW cor. sec. 20-23-16. Drlg. 5,998 ft.
R. W. Norton No. 3 Fosque Unit, NE cor. sec. 29-23-16. Drlg. 3,227 ft.
R. W. Norton No. 4 Fosque Unit, SE cor. sec. 20-23-16. Drlg. 3,984 ft.
R. W. Norton No. 5-A Caddo Lv. Bd., 2,-600 ft. N and 600 ft. W, C sec. 28-23-16. Drk.
R. W. Norton No. 6-A Caddo Lv. Bd., 2,-600 ft. N and 660 ft. W, C sec. 28-23-16. Drlg. 220 ft.
R. W. Norton No. 2 N. S. Spearman, 330 ft. S and 660 ft. E, NW cor. SW sec. 18-23-15. Drlg. 265 ft.
R. W. Norton No. 4 Tyson heirs, 2,943 ft. N and 3,313 ft. E, SW cor. sec. 13-23-16. Drlg. 4,721 ft.
O'Brien Bros. No. 3 Rodessa Oil & Land Co., SW cor. NW SW sec. 14-23-16. Set 16-in. 230 ft.; comp.; 84 B.P.H.; ⅝-in. ch.; T.D. 6,010 ft.
Phillips Pet. Co. No. 1 Adams, NW cor. sec. 17-23-15. Set 16-in. 252 ft.; cg. 6,-025 ft.
Phillips Pet. Co. No. 2 Adams, NW cor. NW NW sec. 17-23-15. Drlg. 5,308 ft.
Phillips Pet. Co. No. 4 Norton Est., SW cor. SW NW sec. 17-23-15. Cmtd. 7-in. 6,047 ft.; T.D. 6,068 ft.; comp.; 18 B.P. H.; ¾-in. tbg. ch.
Phillips Pet. Co. No. 5 Norton Est., SW cor. NW sec. 17-23-15. Set 16-in. 2,326 ft.; W.O.C.
Phillips Pet. Co. No. 1 Robinson, C E½ NE SE sec. 18-23-15. P.B. from 6,028 ft. to 2,250 ft.
R. W. Snowden No. 1 Phillips, C Lot 11, Blk. 36, sec. 23-23-16. Set 10-in. 2,057 ft.
Standard No. 4 Caldwell, NW cor. SW SE sec. 12-23-16. Drlg. 5,260 ft.
Standard No. 14 Lawton, SW cor. NW SW sec. 14-23-16. Set 12¾-in. 262 ft.; cmtd. 5,969 ft.; comp.; 157 B.P.H.; 1¾-in. tbg. ch.; T.D. 6,013 ft.
Standard No. 15 Lawton, SW cor. SW NW sec. 14-23-16. Set 7-in. 5,993 ft.; W.O.C.
Standard No. 16 Lawton, NE cor. SW NW sec. 14-23-16. Drlg. 5,900 ft.
Standard No. 6 Otwell, NE cor. SE SE sec. 15-23-16. Cg. 5,948 ft.
Standard No. 7 Otwell, SW cor. SE SE sec. 15-23-16. Loc.
Standard No. 8 Otwell, NW cor. SE SE sec. 15-23-16. Loc.
Standard No. 4-A M. L. Pitts, 330 ft. N and W, SE sec. 11-23-16. Set 12½-in. at 265 ft.
Tri-State O. & G. Co. No. 1 Hall, C Lot 12, Blk. 29, sec. 23-23-16. Loc.
Tri-State O. & G. Co. No. 1 F. L. Westbrook, C Lot 6, Blk. 12, sec. 23-23-16. Drlg. 4,962 ft.
United No. 1-574 fee, SE cor. sec. 16-22-16. Loc.
United No. 3 Brewer Unit, 655 ft. N and 656 ft. E, SW cor. sec. 21-23-16. Drlg. 5,062 ft.
United No. 4 Brewer Unit, NE cor. 55 ac., sec. 29-23-16. Drlg. 4,214 ft.
United No. 2 Harris, 326 ft. W, 330 ft. N, SE cor. SE SE sec. 15-23-16. Drlg. 5,-442 ft.
United No. 3 Harris, NE cor. sec. 15-23-16. Loc.
United Gas Pub. Ser. Co. No. 1 Maroun Unit, 330 ft. S and E, NW cor. sec. 24-23-16. Cmtd. 7-in. 6,044 ft.; comp.; 30 B.P.H.; ⅝-in. tbg. ch.; T.D. 6,068 ft.
United Gas Pub. Ser. Co. No. 1 McCoy, NE cor. sec. 16-23-16. Drlg. 5,543 ft.
United Gas Pub. Ser. Co. No. 3 Miller, SW cor. NW NW sec. 14-23-16. Cmtd. 7-in. 5,993 ft.; T.D. 6,008 ft.; comp.; 37 B.P.H.; ½-in. tbg. ch.
United No. 2 Mitchell, SW cor. of lse., sec. 20-23-16. Loc.
United No. 5 M. L. Pitts, 312 ft. N and 658 ft. W, SE cor. NW SE sec. 13-23-16. Drlg. 4,978 ft.
United No. 6 M. L. Pitts, 280 ft. S and 658 ft. W, NE cor. SW SE sec. 13-23-16. Cg. 6,020 ft.
United No. 7 Pitts, NE cor. SW SW sec. 13-23-16. T.D. 2,221 ft.; W.O.C.
United No. 8 Pitts, SW cor. of E 28 ac., NE SW sec. 15-23-16. Loc.
United No. 3 N. S. Spearman, SW cor. SE NW sec. 18-23-15. Drlg. 2,371 ft.
United Gas Pub. Ser. Co. No. 3 Thomas Unit, Lots 4 and 5, Blk. 5, Townsite, sec. 23-23-16. Set 7-in. 5,995 ft.; prep. to test 6,016 ft.
United Gas Pub. Ser. Co. No. 5 Thomas Unit, NW cor. SE NW sec. 23-23-16. Cg. 6,033 ft.
United No. 10 N. S. Tyson Unit, SW cor. SE SE sec. 11-23-16. Drlg. 4,514 ft.
United Gas Pub. Ser. Co. No. 17 Rodessa Oil & Land Co., NW cor. sec. 22-23-16. Set 13⅜-in. 313 ft.; W.O.C. 6,010 ft.; T.D.
United Gas Pub. Ser. Co. No. 18 Rodessa Oil & Land Co., SW cor. NE SE sec. 15-23-16. W.O.C. 5,995 ft.; T.D.
United Gas Pub. Ser. Co. No. 19 Rodessa Oil & Land Co., SE cor. NE SE sec. 15-23-16. W.O.C. 6,002 ft.; T.D.
United Gas Pub. Ser. Co. No. 20 Rodessa Oil & Land Co., SE cor. SE NE. W.O.C. 5,996 ft.; T.D.
United Gas Pub. Ser. Co. No. 21 Rodessa Oil & Land Co., NE cor. SE NE sec. 15-23-16. Comp.; 21 B.P.H.; ¼-in. tbg. ch.; T.D. 5,998 ft.
United Gas Pub. Ser. Co. No. 22 Rodessa Oil & Land Co., NW cor. sec. 15-23-16. Drlg. 5,216 ft.

Sabine Parish—Zwolle

Ellis Prod. Co. No. 1 Williams, 330 ft. S and W, NE cor. SE NE sec. 23-7-11. Tested dry; S.D.; W.O. 2,806 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Rondeau et al No 1 Locke, 150 ft. S and 1,495 ft. W, NE cor. sec. 9-15-10. Drk.
A. C. Walters No. 1 D. B. Davis, C SE SW sec. 3-16-9w. Drk.

Bossier Parish

Geo. H. Bringhurst et al No. 1 Buckley, NE SW sec. 36-21-13. S.D. 2,309 ft.
Producers O. & G. Co. No. 1 Webb, C W½ SW sec. 22-17-12. R.U.
Tidwell et al No. 1 Nattin, 200 ft. S and W, C sec. 15-23-14. Set 10-in. 66 ft.; S.D. 1,650 ft.
United Gas Pub. Ser. Co. No. 1-D H. L. Skannal, 660 ft. S, 561 ft. W, NE cor. SE sec. 22-17-12. R.U.

Caddo Parish

Calatex O. & G. Co. No. 1 Hudson, NW SW sec. 8-16-16. O.W.D.D. from 2,970 ft.; jnkd. and abd. 3,202 ft.
Calatex O. & G. Co. No. 2 Scott, 1,038 ft. W, 807 ft. N, SE cor. sec. 5-16-16. Loc.
Falcon Oil Co. No. 15 Deckson, NW SE sec. 27-20-15. P.B. 2,343 ft.; old T.D. 2,349 ft.
C. G. Gibson No. 1 Morgan, 800 ft. S and 1,200 ft. W, NE cor. sec. 15-21-16. Tested. sl. sh. O. 1,921 ft.; D.&A.; S.D. 1,-921 ft.
Hillman et al No. 2 Noel Est., 530 ft. S and 330 ft. W, NE cor. sec. 12-20-16. Drlg. 1,255 ft.
Kenwood Pool, Ins., No. 1 W. K. Henderson, 1,980 ft. S and 200 ft. E, NW cor. sec. 15-19-15. Set 12½-in. 74 ft.; drlg. 827 ft.
Bill Morefield et al No. 1 Stokely, 745 ft. S and 100 ft. E. C sec. 5-20-16. R.U.
Morris & Wooley No. 1 Pender, NW cor. SW sec. 11-20-15. Set 10-in. 60 ft.; set 6-in. 2,207 ft.
Persian Oil Co. No. 1 J. E. Cupples, 500 ft. S and 350 ft. W, NE cor. sec. 24-16-13. Drk.
Press & Lambert No. 1 fee, SW cor. NE SE sec. 10-20-15. Cg. 2,185 ft.
Pyramid O. & G. Co. No. 1-A S. R. Wheeler, 1,320 ft. S, 1,500 ft. W, NE cor. sec. 16-18-16. P.B. from 5,210 ft. to 4,-850 ft.; cmtd. 7-in. 4,804 ft.
Simplex Oil Co. No. 9-A Glassell, 660 ft. N and 200 ft. W, SE cor. NE SW sec. 10-20-15. Loc.
Sport Oil Corp. No. 1-D Muslow, SE cor. sec. 5-20-15. Set 9⅝-in.; cg. 3,250 ft.

Caldwell Parish

Critchett & Woods No. 1 Kyles, NE cor. SW NE sec. 18-11-3e. P.B. to 1,300 ft.; old T.D. 1,740 ft.; W.O.O.
Critchett & Woods No. 2 La. Cen. Lbr. Co., NW cor. NW SE sec. 18-11-3e. Drlg. 1,305 ft.

Catahoula Parish

J. Ray McDermott No. 1 La. Cen. Lbr. Co., 400 ft. S and E, NW cor. sec. 15-10-5e. Drk.

Claiborne Parish

E. T. Oakes No. 1 H. W. Patton, NE cor. sec. 1-20-5. Jkd. old hole 4,242 ft.; skd. rig; set 10¾-in. 1,400 ft.; drlg. 2,100 ft.
Triangle Drlg. Co. No. 1 Kilpatrick, 660 ft. N and E. C sec. 7-19-5. D.S.T. 1,-000,000 ft. gas, 5,450-5,766 ft.; cmtd. 7-in. 5,407 ft.; T.D. 5,811 ft.; comp.; 4,-968,000 ft. gas; 2,310 lbs. R.P.
United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E. SW cor. sec. 31-20-5. Gas odors in cores 6,713-25 ft.; sl. sh. oil 4,097-4,110 ft. and 4,-110-23 ft.; cg. 6,984 ft.

Concordia Parish

Zeni Oil Co. No. 1 Young, 1,200 ft. W, 100 ft. N, SE cor. sec. 28-6n-8e. S.D. 1,120 ft.

De Soto Parish

J. E. Carlson No. 1 A. P. Garland, 250 ft. S and E, NW cor. SW sec. 7-14-14. Loc.
J. G. Carson No. 1 C. J. McMichael, sec. 26-13-15. Drk.
A. G. Halbach et al No. 1 Staton, 150 ft. N and E, SW cor. SE sec. 29-13-14. D.&A. 4,003 ft.
E. A. Stiller No. 1 Jenkins, 400 ft. S and 200 ft. W, NE cor. NW NE sec. 35-13-12. Set 7-in.; claim O.S. 1,469 ft.
Tarbud Oil Co. No. 1 Caddo Realty Co., SW cor. sec. 2-13-16. Prep. to set 7-in. at 2,849 ft.

Franklin Parish

S. C. Jensen No. 1 Bailey, 660 ft. N and W, C sec. 12-11-6e. S.D. 1,430 ft.

Grant Parish

Acadian Prod. Corp. No. 7 Swope, NE cor. SE SE sec. 18-9-1e. Comp.; pmpg. 75 B.P.D., 25% S.W.; T.D. 1,600 ft.
Alexander et al No. 1 Maxwell, sec. 9-9-1e. W.O.S.R. 1,538 ft.
W. B. Rhineck, Tr., No. 1 Swope, SW cor. NW SW sec. 16-9-1e. Cmtd. 6-in. 1,577 ft.; T.D. 1,580 ft.
Taw Oil Co. No. 2 Bradford, sec. 16-9-1e. Drlg. 1,558 ft.
Taw Oil Co. No. 1 Bradford, NE cor. NW sec. 16-9-1e. Set 10-in. 60 ft.; S.D.
Tri-State Lsg. & Dev. Co. No. 1 Ethridge, 600 ft. S and 300 ft. W, NE cor. sec. 19-7-3w. Loc.

La Salle Parish

Montague Oil Co. No. 7-A Zenonia Lbr. Co., NE cor. sec. 10-9-1e. Tested S.W. and W.O. 1,520 ft.
H. T. Taylor No. 7 fee, 120 ft. N and 215 ft. E, SW cor. SW SE sec. 19-10-2e. Comp.; pmpg. 100 B.P.D., 50% S.W.; T.D. 1,580 ft.

Lincoln Parish

Caldwell Land & Timber Co. No. 1 J. K. Hammons, 330 ft. S and E, NW cor. SE SW sec. 30-18-1w. S.D. 665 ft.
Herman L. Brown et al No. 1 S. Gardner, 330 ft. N, 330 ft. E, SW cor. NW NE sec. 10-17-4w. Schlumberger s. sd. 5,664-71 ft. and 5,678-5,701 ft.; cg. 5,910 ft.

Morehouse Parish

J. B. Collins et al No. 1 E. M. Clarke, SE NE sec. 10-20-7e. Drk.
John E. Farrell No. 18 State, 198 ft. S and 1,753 ft. E, NW cor. sec. 9-21-4e. Drk.
John E. Farrell No. 19 State, 2,009 ft. N and 2,016 ft. E. SW cor. sec. 4-21-4e. Drk.
United No. 37 Crossett, 1,321 ft. N and 1,324 ft. W, SE cor. sec. 15-21-4e. W.O. C. 2,196 ft.
United Gas Pub. Ser. Co. No. 24 Tensas, 1,330 ft. W and 664 ft. N, SE cor. sec. 3-21-4e. Loc.
United Gas Pub. Ser. Co. No. 25 Tensas, 1,418 ft. W and 1,242 ft. S, NE cor. sec. 29-22-4e. Loc.
United No. 17 Tensas, 1,320 ft. N and 1,-317 ft. W, SE cor. sec. 26-22-4e. Drk.
United No. 21 Tensas, sec. 10-21-4e. Cmtd. 6⅝-in. 2,070 ft.; T.D. 2,206 ft.
United No. 22 Tensas, 340 ft. W and 1,-002 ft. N, SE cor. sec. 4-21-4e. W.O.C. 155 ft.
United No. 23 Tensas, 2,559 ft. W and 1,-389 ft. S, NE cor. sec. 20-22-4e. Loc.

Red River Parish

I. J. Allen No. 1 Franklin Realty Co., sec. 20-11-9. Set 12½-in. 110 ft.; drlg. 2,800 ft.
Byrd Explo. Co. No. 1 Edge, NE¼, SE¼, sec. 29-13-11. R.U.C.T. 2,429 ft.
Byrd Explo. Co. No. 1 Waller, 1,570 ft. N and 1,520 ft. W, SE cor. sec. 20-13-11. Prep. to test at 860 ft.
H. D. Conley et al No. 1 Long Bell Lbr. Co., NE NE sec. 19-13-9. S.D. 1,172 ft.
T. G. Shaw No. 1 Teekell, SE cor. SE SW sec. 34-13-10. Set 10-in. 62 ft.; drlg. 1,-500 ft.

Richland Parish

J. S. Morrisey No. 1 Jones, 1,293 ft. N. 636 ft. E, SW cor. sec. 15-18-7e. S.D. 1,705 ft.
Arthur Wray No. 1 Slocum, 2,436 ft. S, 560 ft. W, NE cor. sec. 10-17-6e. S.D. 1,676 ft.

Sabine Parish

I. J. Allen No. 1 Paul, sec. 24-9-14. R.U.
Circle W. Oil Co. No. 1 Cassell, 660 ft. E and 418 ft. S, C sec. 30-9-13. Drlg. 850 ft.
M. C. Forsman No. 1 Patrick, NE SW sec. 21-9-13. Set 8-in. 75 ft.; drlg. 900 ft.
F. G. Cox No. 1 Whitney Corp., C NW NE sec. 8-9-13. Drlg. 2,700 ft.
Pearl Oil Co. No. 6 Crawford, C SE SE sec. 20-9-13. Drlg. 2,110 ft.
J. R. Keen No. 1 Long Bell, 276 ft. N and 288 ft. W, SE cor. NE SW sec. 4-22-36. Drlg. 300 ft.
A. C. Scott No. 1 Bowman Hicks, 660 ft. S and 330 ft. E, NW cor. NW SW sec. 23-9-13. Drlg. 900 ft.
Claude H. Smith No. 1 Whitney Corp., 330 ft. S, 990 ft. W, NE cor. sec. 19-10-13. Set 7-in. 1,514 ft.; S.D. 3,080 ft.
A. H. Tarver No. 2 Baker, NW cor. NE sec. 36-8-12. D.S stuck 5,200 ft.
J. J. Watson No. 1 Rensaw, NW cor. SE SW sec. 29-9-13. Cmtd. 6-in. 1,540 ft.; comp.; pmpg. 10 B.P.D.; T.D. 1,767 ft.
Lee Whitehurst No. 2 Latham, sec. 19-9-13. Set 7-in. 1,593 ft.; acid trtd. 2,128 ft.; W.O.O.

Tensas Parish

H. M. Jones et al No. 1 Chicago Mill & Lbr. Co., NE cor. sec. 30-12-10e. D.S.T. 761-83 ft.; est. 1,000,000 ft. gas; set csg.

Union Parish

Boucher & Pace No. 1 Frost-Johnson, NE NE sec. 27-21-1e. Top Travis Peak 3,-880 ft.; fsg. 4,076 ft.
Carbons Consd. No. 1 Bird, SW cor. SE sec. 27-22-3e. Set 10-in. 202 ft.; comp.; T.D. 2,185 ft.; 1,000,000 ft. gas.
John E. Farrell No. 20 State, 988 ft. S and 4,261 ft. E, NW cor. sec. 4-21-4e. R.U.
Southern Carbon Co. No. 9 Grayling, 1,-260 ft. N and 1,954 ft. W, SE cor. sec. 8-21-4e. Drlg. 1,250 ft.
United Carbon Co. No. 4 Stovall, 1,698 ft. E and 2,201 ft. N, SW cor. sec. 33-21-4e. Loc.
United Gas Pub. Ser. Co. No. 3 Stovall, NE NW sec. 33-21-4e. Cmtd. 6-in. 2,-100 ft.; comp.; 12,000,000 ft. gas; T.D. 2,125 ft.

Vernon Parish

Llano Del Rio Co. No. 2 Gulf Lbr. Co., 1,-285 ft. S, 1,000 ft. W, NE cor. sec. 7-1n-9w. S.D. 3,240 ft.

Webster Parish

J. H. Edwards No. 1 Hooper, 330 ft. S and E, NW cor. SW sec. 8-17-9. T.A. 3,016 ft.
J. P. Evans et al No. 1 T. Crichton, NE SE sec. 35-18-9. Cmtd. 6⅝-in. 5,362 ft.; tstd. 1,000,000 ft. gas; cg. 5,575 ft.
Ohio Oil Co. No. 1 R. L. Holloway, 660 ft. S, 760 ft. W, C sec. 23-21-10. Drlg. 7,580 ft.

SOUTH LOUISIANA FIELDS

Bayou Mallet—Acadia Parish

Superior O. & G. Co. No. 3 George Bradley, sec. 52-7s-1e. T.D. 6,330 ft.; drill stem stuck.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 31 Watkins, sec. 9-12-12w. T.D. 5,502 ft.; 7-in. csg. 5,485 ft.; I.P. 836 B.P.D. through 18/64-in. choke; T.P. 835 lbs.; C.P. 555 lbs.
Shell Pet. Corp. No. 32 Watkins, sec. 7-12s-12w. R.U.
Shell Pet. Corp. No. 33 Watkins, 65 ft. S cor. sec. 18-12s-12w. T.D. 4,838 ft.; 7-in. csg. 4,696 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 34 State, sec. 34-23s-22e T.D. 5,935 ft.; 7⅝-in. csg. at 5,891 ft.; comp.; no gauge.
Texas Co. No. 36 State, Drlg. sand and sh. 5,310 ft.
Texas Co. No. 40 Caillou Isle, sec. 20-23s-20e. T.D. 3,921 ft.; running csg.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 13 School Land, sec. 16-14s-13w. Drlg. sh. 5,431 ft.
Burton Sutton No. 14 School Land, sec. 16-14s-13w. Drk.
Burton-Sutton No. 3-A School Land, sec. 16-14s-13w. Drlg. sh. and lime 3,805 ft.
Humble-Magnolia No. 16 Cameron Meadows. T.D. 5,326 ft.; perforated from 4,720-42 ft.; preparing to run screen and liner.
Humble-Magnolia No. 17 Cameron Meadows, sec. 21-14s-13w. Drk.

Cheneyville—Rapides Parish

Texas Co. No. 1 State (Andrade), sec. 5-15s-2e. Cored to 5,713 ft.; run electrical coring test; T.A.
Texas Co. No. 1 Weihl, sec. 53-1s-2e. Drlg. sh. and lime 2,612 ft.

Choctaw Dome—Iberville Parish

Standard Oil Co. No. 8 Myrtle Grove Wilburt, sec. 52-9s-11e. T.D. 5,828 ft.; P.P. to 2,450 ft. and sdtkd.; drlg. sh. 4,215 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 12 Community, sec. 30-10s-2e. Drlg. sand 5,481 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 3 State, sec. 5-22s-16e. T.D. 7,613 ft.; P.B. and sdtkd. at 5,010 ft.; now drlg. sh. 5,136 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 5 State, sec. 24-31s-16e. S.D. 6,602 ft.

Gillis—Calcasieu Parish

R. Dobbs et al No. 1 Buhler, sec. 11-9s-8w. R.U.
Fohs Oil Co. No. 2 Ida Powers, sec. 14-9s-8w. T.D. 7,035 ft.; pulling stuck drill stem.
Fohs Oil Co. No. 11 O. H. Castle, sec. 13-9s-8w. Drlg. sh. 5,496 ft.
Texas Co. No. 9 Nickerson fee, sec. 13-9s-8w. Drlg. sh. 2,710 ft.
Union Sulphur Co. No. 1 J. A. Bel estate T.D. 7,683 ft.; P.B. to 6,522 ft.; W.O.C.
Union Sulphur Co. No. 1 G. S. Cole, sec. 12-9s-8w. T.D. 6,655 ft.; P.B. 3,816 ft.; drilled to 5,276 ft.; tested dry gas; S.D.
Union Sulphur Co. No. 1 Green Acres, sec. 11-9s-8w. Drlg. sh. 7,254 ft.
Union Sulphur Co. No. 16 State, sec. 11-9s-8w. Drlg. sdy. sh. 4,212 ft.

Hackberry—Cameron Parish

Calcasieu Oil Co. No. 6 Hanzen, sec. 14-12s-10w. T.D. 5,793 ft.; cmtd. 7-in. csg.; W.O.C.
Gulf Ref. Co. No. 20 Irwin, sec. 12-12s-10w. Drlg. sdy. sh. 7,129 ft.
Stanolind O. & G. Co. No. 16-A School Land, sec. 16-12s-12w. Drlg. sh. 5,752 ft.
Stanolind O. & G. Co. No. 21-B Gulf Land, sec. 14-12s-10w. S.D. 6,963 ft.; top salt 6,948 ft.; P.B. and sdtkd.; drilled to 6,090 ft.; fsg.
Stanolind O. & G. Co. No. 23-B Gulf Land, sec. 14-12s-10w. Drk.
Sutton Oil Co. No. 3 Duhon, sec. 22-12s-10w. T.D. 3,183 ft.; 7-in. csg. at 3,160 ft.; testing.
Texas Co. No. 21 State, sec. 12-12s-10w. Drk.
Texas Co. No. 19-B State, sec. 13-12s-9w T.D. 6,724 ft.; P.B. to 4,638 ft.; sdtkd.; drlg. sand and sh. 5,195 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 1 Zimmerman. Abd. 5,386 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 2 Banta, sec. 40-13s-9e. T.D. 6,655 ft.; I.P. 672 B.P.D., ⅝-in. choke; T.P. 1,440 lbs.
Herton Oil Co. No. 3 Banta, sec. 40-13s-9e. Coring sh. 7,165 ft.
Herton Oil Co. No. 4 Banta, sec. 40-13s-9e. R.U.
Herton Oil Co. No. 1 Carter, sec. 33-13s-9e. Drlg. sh. 9,160 ft.

Jennings—Acadia Parish

Port City Oil Co. No. 18 Heywood, sec. 41-9s-2w. T.D. 2,060 ft.; 6-in. csg. at 1,970 ft.
Shell Pet. Corp. No. 1 Conover, sec. 40-9s-2w. Crg. sdy. sh. 7,391 ft.
Stanolind O. & G. Co. No. 16 Houssiere-Latreille, sec. 47-9s-2w. Drlg. sdy. L. 6,934 ft.

Lafitte—Jefferson Parish

Texas Co. No. 4 Lafitte, sec. 20-17s-24e. Drlg. sh. 9,270 ft.
Texas Co. No. 4 Rigolettes Fur Co., sec. 29-17s-24e. Drlg. sh. 7,487 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. Wtr. sd. 5,107 ft.
Texas Co. No. 40 State, sec. 36-21s-19e. Drlg. 2,347 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 5 LaFourche Basin Levee Board, sec. 11-18s-25e. Drlg. hard sand 3,888 ft.

Leesville—LaFourche Parish

Delta Oil Co. No. 1 Constantine, sec. 34-21s-22e. Drlg. sh. 4,112 ft.
Gulf Oil Corp. No. 10 Allen Land, sec. 21-21s-22e. Drlg. sdy. sh. 237 ft.
Lincoln Oil Co. No. 2 Constentine, sec. 27-21s-22e. T.D. 5,133 ft.; salt; P.B. 3,728 ft.; sidetracked; drlg. sh. 3,266 ft.
Texas Co. No. 47 Leesville, sec. 27-21s-22e. Drlg. sdy. sh. 4,541 ft.
Texas Co. No. 48 Leesville, sec. 27-21s-22e. Drk.
Texas Co. No. 49 Leesville, sec. 22-21s-22e. R.U.

New Iberia—Iberia Parish

Canal Oil Co. No. 3 Sabatier, sec. 54-1s-7e. S.D. 3,180 ft.; in salt.
Kitos Oil Co. No. 2-A Sealey, sec. 56-12s-7e. T.D. 4,560 ft.; P.B. to 2,200 ft.; W.O.C.
Teche Oil Co. No. 1 Sanders, sec. 53-12s-7e. S.D. 957 ft.
Teche Oil Co. No. 1 Schwing, sec. 52-12s-7e. T.D. 3,876 ft.; P.B. to 1,500 ft.; sidetracked. drlg. sh. 3,787 ft.
Texas Co. No. 1 Smith, sec. 72-12s-7e. Drlg. wtr. sand 6,608 ft.

Roanoke—Jefferson Davis Parish

Gulf Oil Corp. No. 2-B Anding, sec. 2-9s-4w. Drlg. sdy. sh. 7,129 ft.
Humble O. & R. Co. No. 4-B Devilbiss, sec. 11-9s-4w. Drlg. sdy. sh. 2,211 ft.
Shell Pet. Corp. No. 3 Carter, sec. 1-9s-4w. R.U.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 2 Colmier, sec. 4-6s-5e. Drlg. sh. 3,313 ft.
Texas Co. No. 1 Futral, sec. 20-6s-6e. Drlg. sh. 5,826 ft.
Texas Co. No. 1 Lahaye, sec. 4-6s-5e. Drlg. sdy. shale 4,455 ft.

St. Martinville—St. Martin Parish

Continental Oil Co. No. 1 fee, sec. 18-11s-6e. T.D. 8,150 ft.; P.B. to 7,370 ft.; drilled to 7,818 ft.; set 7-in. csg. on bottom; perf. csg. 7,710-16 ft.; tested S.W.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-10s-4e. Derrick.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 324 fee, sec. 20-9s-10w. T.D. 4,526 ft.; P.B. 2,825 ft.; drilled to 3,917 ft.; 7-in. csg. at 3,898 ft.; I.P. 90 B.P.D. on pump.
Union Sulphur Co. No. 328 fee, sec. 20-9s-10w. Drlg. sh. 2,146 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 1 Hugh Breckenridge, sec. 29-7s-2w. T.D. 8,306 ft.; 5-in. csg. on bottom; W.O.C.
Continental Oil Co. No. 1 Doris Fruge, sec. 28-7s-2w. R.U.
Continental Oil Co. No. 3 Homeseekers, sec. 29-7s-2w. Drlg. lime 7,043 ft.
Continental Oil Co. No. 4 Homeseekers, sec. 39-7s-2w. Drk.
Continental Oil Co. No. 1 P. Johnson, sec. 30-7s-2w. T.D. 8,317 ft.; 7-in. csg. on bottom; I.P. 425 bbls. in 17 hrs., ¼-in. choke; T.P. 1,100 lbs.; C.P. 1,150 lbs.
Continental Oil Co. No. 2 Ortego, sec. 28-7s-2w. 10-in. csg. at 1,429 ft.
Continental Oil Co. No. 2 L. L. Welch, sec. 28-7s-2w. Drlg. sh. and lime 7,025 ft.
General Crude Oil Co. No. 1 Vincent, sec. 31-7s-2w. Drlg. sh. 9,144 ft.

Vinton—Calcasieu Parish

Vinton Pet. Co. No. 1 fee, sec. 34-10s-12w. Drlg. sand 2,671 ft.
Wilson Broach No. 19 Wilson Strip, sec. 33-10s-12w. Abd. 4,592 ft.

White Castle—Iberville Parish

Shell Pet. Corp. No. 3 Shingle. 650 ft. S. 600 ft. E of NW cor. sec. 12-11s-12e. T.D. 5,763 ft.; P.B. 3,800 ft.; sidetracked; drlg. sh. 4,149 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Magnolia Pet. Co. No. 1 Homeseekers Dev. Co., sec. 54-10s-1w. Drlg. broken sand; no show at 8,066 ft.

Allen Parish

Humble O. & R. Co. No. 1 J. A. Bell, sec. 28-6s-7w. Blew out; caught fire; abd.
Humble O. & R. Co. No. 2 Bell est., 933 ft. N and E of No. 1 Bell. M.I.R.

Avoyelles Parish

Frost Oil Co. No. 1 Hinds Lbr. Co., sec 3-3n-4e. R.U.

Cameron Parish

Magnolia Pet. Co. No. 1 Hebert, sec. 13-12s-9w. Drlg. sh. 7,449 ft.; oil show from 7,338-50 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. Digging pits.

Iberia Parish

Jefferson Lake Oil Co. No. 1 State, Twp 12s-5e. T.D. 8,610 ft.; P.B. to 8,483 ft.; perf. from 8,460-66 ft.; S.D.
Jefferson Lake Oil Co. No. 322 State Lake Piegneur. S.D. 5,690 ft.
Texas Co. No. 2 State, sec. 35-11s-8e. R.U.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Lacassan, sec. 20-11s-5w. T.D. 9,523 ft.; drlg. sh. 9,654 ft.
Stanolind O. & G. Co. No. 1 C. E. Britt, sec. 15-10s-3w. R.U.
Strake Oil Corp. No. 1 Onezia Miller Est., sec. 7-9s-5w. Drlg. sand and sh. 1,130 ft.

Livingston Parish

Bunte O. & G. Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

St. Bernard Parish

John Cartwright No. 1 Meraux Nunes, sec. 19-13s-12e. S.D. at 80 ft.

St. James Parish

Shell Pet. Corp. No. 1 Colonial Sugar, sec. 5-12s-5e. Coring sh. 7,242 ft.

St. Landry Parish

Limited Oil Co. No. 1 Miller Est., sec. 47-8s-4e. Drlg. sh. 8,282 ft.

St. Martin Parish

Southern Oil (S. C. Yingling et al) No. 1 State, sec. 13-9s-8w. T.D. 3,172 ft.; tested S.W.; P.B. to 1,400 ft.; preparing to sidetrack.
Texas Co. No. 2 State, sec. 14-10s-9e. Drlg. sh. 3,881 ft.
Texas Co. No. 8 St. Martins Land, sec. 17 8s-7e. T.D. 8,213 ft.; D.S. stuck; shot off at 5,050 ft.; fishing.
S. C. Yingling et al No. 2 State, sec. 13-9s-8w. Driving piling.

Terrebonne Parish

J. B. Beck et al No. 1 Realty Operators, sec. 103-17s-17e. R.U.
Humble O. & R. Co. No. 1 Continental Land & Fur Co., sec. 30-17s-14e. T.D. 235 ft.; 20-in. csg. at 216 ft.; W.O.C.

Vermillion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. Drlg. sh. 7,720 ft.
Del-Shell Exploration Co. No. 1 Landry heirs, sec. 1-13s-4e. Drlg. sh. 460 ft.
Louisiana Land & Expl. Co. No. 1 La. Fur Co., sec. 16-15s-1e. Drk.

TEXAS

Week Ending May 23

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 10-X Hellmuth, Wm. Harvey Sur. T.D. 4,100 ft., 7-in. csg. at 4,045 ft.; swabbing.

Hastings—Brazoria County

Humble O. & R. Co. No. 2-B Cannon, H. T.&B. Sur. T.D. 6,070 ft.; 7-in. csg. at 6,042 ft.; I.P. 29 B.P.H., ¼-in. choke; T.P. 850 lbs.; C.P. 850 lbs.
Humble O. & R. Co. No. 3 Nelson, H.T.&B. Sur. T.D. 1,842 ft.; 10¾-in. csg. at 1,816 ft.
Stanolind O. & G. Co. No. 1 Brown, H.T. &B. Sur. Drlg. sand 5,900 ft.
Stanolind O. & G. Co. No. 3 Ford, A.C.H.& B. Sur. No. 1. Drk.
Stanolind O. & G. Co. No. 6 Shaw, H.T.&B. Sur. No. 36. Drk.
Stanolind O. & G. Co. No. 5 B. L. Turner, A.C.H.&B. Sur. No. 1. T.D. 6,078 ft.; 5-in. csg. 6,005 ft.
Stanolind O. & G. Co. No. 6 Turner, A.C. H.&B. Sur. No. 1. R.U.
Stanolind O. & G. Co. No. 4 Williams, A.C.H.&B. Sur. No. 1. T.D. 6,080 ft.; 7-in. csg. at 6,004 ft.; I.P. 608 B.P.D., ¼-in. choke; T.P. 1,025 lbs.; C.P. 2,275 lbs.
Stanolind O. & G. Co. No. 5 H. G. Williams, A.C.H.&B. Sur. T.D. 110 ft.; W. O.C.
Stanolind O. & G. Co. No. 4 Wooster, A. C.H.&B. Sur. No. 1. T.D. 6,060 ft.; 7-in. csg. at 6,000 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 1 Armstrong Plantation fee, Polly and Chance Sur. Rig up.

Manvel—Brazoria County

Texas Co. No. 22 Houston Oil Field Assn., A.C.H.&B. Sur. No. 1. Drlg. sh. and lime 2,284 ft.
Texas Co. No. 2 Smith, H.T.&B. Sur. Drlg. sdy. sh. 4,060 ft.
Texas Co. No. 22-B Belcher, H. N. Little Sur. Abd. 5,426 ft.
Texas Co. No. 23-B Belcher, H. N. Little Sur. Drlg. sh. 5,211 ft.

Stratton Ridge—Brazoria County

Warner Oil Co. No. 3 Dannenbaum, J. D. Grace Sur. Coring sand 1,070 ft.

West Columbia—Brazoria

Texas Co. No. 13 Abrams, George Tennille Sur. Drlg. sh. 866 ft.

Anahuac—Chambers County

Humble O. & R. Co. No. 5 Broussard & Hebert, H.&T.C. Sur. T.D. 7,150 ft.; P.B. to 6,799 ft.; W.O.C.
Humble O. & R. Co. No. 13 Clark, H.&T.C. Sur. T.D. 1,545 ft.; 10¾-in. csg. at 1,532 ft.
Humble O. & R. Co. No. 3 Johnson, H.&T. C. Sur. T.D. 7,128 ft.; 7-in. csg. 7,024 ft.; testing.
Humble O. & R. Co. No. 16 Middleton, sec. 58, T.D. 7,085 ft.; I.P. 30 B.P.H., ¼-in. choke; T.P. 1,175 lbs.
Humble O. & R. Co. No. 9 Tyrell, H.&T.C Sur. T.D. 7,082 ft.; 7-in. csg. at 7,041 ft.
Humble O. & R. Co. No. 4 Zappe, H.T.& C. Sur. T.D. 7,088 ft.; top sand 7,036 ft.; 7-in. csg. at 7,040 ft.; I.P. 22 B.P.H., ¼-in. choke.
Humble O. & R. Co. No. 10 White, James McGahey Sur. T.D. 7,090 ft.; 7-in. csg. at 7,064 ft.
Sun Oil Co. No. 13 White, James McGahey Sur. T.D. 7,084 ft.; 7-in. csg. at 7,036 ft.; I.P. 26 B.P.H., ¼-in. choke; T.P. 1,200 lbs.; C.P. 1,900 lbs.
Sun Oil Co. No. 15 White J. McGahey Sur. R.U.
Sun Oil Co. No. 18 White, J. McGahey Sur. T.D. 1,396 ft.; W.O.C.

Barbers Hill—Chambers County

Stanolind O. & G. Co.'s No. 29 Chambers, Wm. Bloodgood Sur. Derrick.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 2 Middleton, M. A. Carroll Sur. T.D. 6,609 ft.; 7-in. csg. at 6,597 ft.; I.P. 110 bbls. in 16 hrs.; 10/64-in. choke; T.P. 1,260 lbs.; C.P. 1,400 lbs.
Stanolind O. & G. Co. No. 2 State. Drlg. sh. 6,313 ft.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 69 Davis, B. Young League. Drlg. sh. 2,561 ft.

Blue Ridge—Fort Bend County

Alamo Drlg. Co. No. 1 Blakely, E. Drew Sur. T.D. 4,098 ft.; running 7-in. csg.
Ben Barnett No. 2 Blakely, E. Drew Sur. T.D. 2,120 ft.; 7-in. at 2,107 ft.; drlg. plug.
H. G. Frost et al No. 1 Robinson, H. Shropshire Sur. Drlg. lime 1,500 ft.
D. M. Wallace and Woodley Pet. Co. No. 2 Blakely, E. Drew Sur. T.D. 3,963 ft.; P.B. and drlg. to 3,911; 5-in. csg. at 3,860 ft.; I.P. 325 B.P.D., ¾-in. choke; T.P. 700 lbs

Orchard—Fort Bend County

Gulf Prod. Co. No. 44 Moore, Leo Burknapp Sur. Sh. 6,020 ft.; P.B. 3,575 ft.; I.P. 20 B.P.D. flowing by heads.
Gulf Oil Corp. No. 46 Moore, Leo Burknapp Sur. Drlg. sh. 1,960 ft.

Thompson—Fort Bend County

Naylor et al No. 8 Gehr, S. Kennedy Sur. Drlg. sh. 2,275 ft.
Sterling O. & R. Co. No. 1 F. I. Booth, H. Chrisman Sur. T.D. 5,407 ft.; 7-in. csg. at 5,320 ft.; W.O.C.

High Island—Galveston County

Stanolind O. & G. Co. No. 5 B.&N.O., Fitzsimmons Sur. T.D. 6,477 ft.; P.B. 5,795 ft.; 7-in. csg. at 5,755 ft.; P.B. to 5,785 ft.; perf. 5,760-80 ft.; flowed 590 bbls. fluid, 50 per cent S.W.; P.B. 5,530 ft.; drilled to 5,765 ft.; testing.
Stanolind O. & G. Co. No. 56 Cade. N. Fitzsimmons Sur. Drlg. sh. and lime 4,137 ft.
Stanolind O. & G. Co. No. 1 Cooper, M. Dunman Sur. Drlg. sand and lime 2,928 ft.
Stanolind Oil & Gas Co. No. 18-B Smith Royalty, M. Dunman Sur. T.D. 5,529 ft.; P.B. 3,650 ft.; sidetracked at 4,022 ft.

Dickinson—Galveston County

Humble O. & R. Co. No. 3 Magale, J. S. Jones Sur. Rig up.
Humble O. & R. Co. No. 3 E. E. Townes, J. S. Jones Sur. T.D. 8,045 ft.; 7-in. csg. at 7,984 ft.; I.P. 243 B.P.D.; T.P. 2,250 lbs.; C.P. 1,800 lbs.
Humble O. & R. Co. No. 8-A Stewart, J. Sellers Sur. Derrick.
Humble O. & R. Co. No. 3-B Bayou Dev. Co., J. Sellers Sur. Drlg. sh. 3,775 ft.
Humble O. & R. Co. No. 7-B Stewart, John Sellers Sur. T.D. 8,035 ft.; top sand 8,015 ft.; running 7-in. csg.; I.P. 32 B.P.H., ¼-in. choke; T.P. 1,300 lbs.; C.P. 1,200 lbs.
Ken Ben Oil Co. No 1 Stewart, W. K. Wilson Sur. Drlg. sh. 7,865 ft.
Pure Oil Co. No. 3 Shelar, B.B.H.&C. Sur. T.D. 8,052 ft.; 7-in. csg. 8,025 ft.; I.P. 75 B.P.D. on gas lift.
Stanolind O. & G. Co. No. 4 State, Tr. No. 3. Drlg. sh. 6,849 ft.
Stanolind O. & G. Co. No. 5 State, Tract 3. Drlg. sdy. sh. 8,532 ft.

Batson—Hardin County

Nimrod Prod. Co. No. 1 Butler, W. Donoho Sur. Drlg. sh. 3,347 ft.

Saratoga—Hardin County

John Deering No. 1 Teel, Thomas Gaines Sur. Drlg. sh. 5,442 ft.

Humble—Harris County

Texas Co. No. 272 Landslide, R. D. Unman Sur. T.D. 3,160 ft.; 7-in. csg. at 3,160 ft.; I.P. 187 B.P.D., ¼-in. choke; T.P. 1,150 lbs.

Mykawa—Harris County

West Prod. Co. No. 9 Irwin, W. B. Walker Sur. T.D. 4,985 ft.; P.B. and sdtkd.; drlg. sh. 4,537 ft.
West Prod. Co. No. 1 Minnetex, Wm. Lovett Sur. Drlg. sh. 4,875 ft.

Pierce Junction—Harris County

Rio Bravo Oil Co. No. 14-B Settegast, J. Kappman Sur. Drlg. sh. 3,146 ft.

South Houston—Harris County

Smith & McDannald No. 1 Phillips, H.T. &B. Sur. No. 6. T.D. 4,780 ft.; 7-in. csg. at 4,640 ft.; I.P. 150 B.P.D., 12/64-in. choke; T.P. 430 lbs.
Stanolind O. & G. Co. No. 1 M. Butz, H.T.&B. Sur. No. 6. R.U.
Stanolind O. & G. Co. No. 1 Funk, Callahan & Vince Sur. Drlg. sand and sh. 5,014 ft.
Stanolind O. & G. Co. District No. 23, H. T.&B. Sur. No. 5. Drlg. sh. 4,346 ft.
Stanolind O. & G. Co. District 24, H.T.&B. Sur. No. 5. Drk.
Stanolind O. & G. Co. No. 3 First Natl. Bank, Callahan-Vince Sur. Rig.
Stanolind O. & G. Co. No. 1 Schwartz, H.T.&B. Sur. No. 6. T.D. 4,775 ft.; I.P.

303 B.P.D., ¼-in. choke; T.P. 800 lbs.; C.P. 1,850 lbs.

Stanolind O. & G. Co. No. 2 Schwartz, H. T.&B. Sur. Drlg. sh. 1,829 ft.

Stanolind O. & G. Co. No. 1 C. J. Wyndelts, H.T.&B. Sur. No. 6. T.D. 79 ft.; W.O.C.

Tomball—Harris County

Amerada-Stanolind No. 3 Felber, E. Smith Sur. R.U.

Humble O. & R. Co. No. 5 Holderrieth, C. N. Pillot Sur. T.D. 953 ft.; 10¾-in. at 936 ft.

Humble O. & R. Co. No. 2 Laird, C. N. Pillot Sur. T.D. 5,558 ft.; 7-in. csg. at 5,553 ft.; I.P. 24 B.P.H., ¼-in. choke; T.P. 675 lbs.; C.P. 800 lbs.

Humble O. & R. Co. No. 10-B Quilter, A. Senschall Sur. T.D. 5,559 ft.; 7-in. csg. at 5,551 ft.

Humble O. & R. Co. No. 1-B Tollman, J. House Sur. Drlg. sh. and lime 5,360 ft.

Texas Co. No. 2 Sam Lewis, C. N. Pillot Sur. T.D. 941 ft.; 10-in. csg. at 934 ft.; drlg. plug.

Amelia—Jefferson County

H. J. De Arman No. 1 First National Bank, F. Bergner Sur. 1-A. Rig up.

Humble O. & R. Co. No. 2 Guinn, C. Williams Sur. Drlg. sand 5,346 ft.

Humble O. & R. Co. No. 1 Pinchback, C. Williams Sur. T.D. 6,768 ft.; made 2,-160,000 ft. gas per day; killed to deepen.

Big Hill—Jefferson County

Glenn McCarthy No. 1 Langham, H. Williams Sur. R.U.

Stanolind O. & G. Co. No. 3-A Pipkin and Davis, Wm. McFaddin Sur. Drlg. sh. 6,030 ft.

Fannett—Jefferson County

Gulf Oil Corp. No. 18 Thomas, W. P. Smith Sur. T.D. 5,557 ft.; pumping 73 B.P.D.

Cleveland—Liberty County

Gulf Oil Corp. No. 15-C Cleveland, J. Pleasant Sur. Drlg. gumbo 1,051 ft.

Esperson—Liberty County

General Crude Oil Co. No. 27 Esperson, Kokernot Sur. T.D. 2,863 ft.; 7-in. csg. 2,854 ft.; W.O.C.; comp.; no gauge.

Hankamer—Liberty County

Gulf Oil Corp. No. 24 Boyd, Amos Allen Sur. T.D. 6,050 ft.; I.P. 400 B.P.D., 3/32-in. choke.

Gulf Oil Corp. No. 6 Crow and Jacobs, H.T.&C. Sur. No. 21. T.D. 5,380 ft.; P.B. to 3,675 ft.; drilled to 3,940 ft.; washing.

Uscan Oil Co. No. 5 Ezzell, Levi Borrow Sur. Drlg. sh. 4,812 ft.

Hardin—Liberty County

Atlantic Oil & Prod. Co. et al No. 1 Hardy James Robinson Sur. T.D. 8,110 ft.; tested S.W. on D.S.T. 7,699-7,709 ft.; S.D.

Hull—Liberty County

Gulf Oil Corp. No. 26 Morris-Phillips, O. Underton Sur. Drlg. sh. 4,368 ft.

Gulf Oil Corp. No. 112 Phoenix, J. Devore Sur. Drlg. sh. 3,615 ft.

Republic-Houston No. 160 Dolbear, J. Devore Sur. M.I.R.

Markham—Matagorda County

Hamill & Hamill No. 1 Poor Boy Smith, H. Parker Sur. Abd. 3,903 ft.

Van Vleck—Matagorda County

Skelly Oil Co. No. 1 Langham, M. Cummings Sur. T.D. 7,505 ft.; perforated csg. from 7,460-75 ft.; flowing small amt. of oil.

Skelly Oil Co. No. 2 Metzler, M. Cummins Sur. Moving in.

Skelly Oil Co. No. 1 Rugelsey, I.&G.N Sur. No. 267. T.D. 7,505 ft.; reaming to set csg.

Skelly Oil Co. No. 6-B Kobb, M. Cummings Sur. T.D. 7,502 ft.; 7⅝-in. csg. 7,502 ft.

Skelly Oil Co. No. 7-B Cobb, M. Cummings Sur. Spudded.

Conroe—Montgomery County

Humble O. & R. Co. No. 79-A South Tex. Dev. Co., Theo. Slade Sur. T.D. 5,123 ft.; 7-in. csg. at 5,083 ft.; I.P. 80 B.P.H., ½-in. choke; T.P. 710 lbs.; C.P. 900 lbs.

South Gulf Corp. No. 1 Brent, D. W. Collins Sur. Drlg. shale 4,000 ft.

Sun Oil Co. No. 26 Foster. T.D. 5,122 ft.; 7-in. csg. at 5,018 ft.; I.P. 11 B.P.H., ⅝-in. choke.

Splendora—Montgomery County

Tide Water Oil Co.-Darby Pet. Co. No. 1 W. C. and Ella Corbett, Josiah Blackman Sur. Drlg. sh. and shells 5,305 ft.

Orange—Orange County

Texas Canadian Oil Co. No. 1 Bland, James Dyson Sur. Abd. 7,550 ft.

Livingston—Polk County

Hawkeye Pet. Co. No. 1 W. F. Harder, A. Viesca Sur. Rig up.

Greta—Refugio County

Hewitt & Daugherty No. 24 Lambert, Hardwick Sur. Drlg. sh. 2,421 ft.

United Gas Co. No. 24 Lambert-Hardwick Sur. T.D. 5,926 ft.; I.P. 395 B.P.D. through 3/16-in. choke.

Refugio—Refugio County

D. & D. Oil Co. No. 3, Heard townsite. T.D. 4,330 ft.; fsg.

United Gas Co. No. 12 Fannie Heard, Refugio townsite. Drlg. sh. 3,430 ft.

United Gas Co. No. 18 Fox, Hughes & Brown Sur. Drlg. sh. 1,130 ft.

United Gas Co. No. 7 Ryalls, Refugio townsite. T.D. 4,926 ft.; 5-in. csg. 4,919 ft.; comp.; no gauge.

Tomoconnor—Refugio County

Quintana Pet. Co. No. 35-A Tom O'Connor, Swisher Sur. Drlg. sh. 5,330 ft.

Quintana Pet. Co. No. 1-C Tom O'Connor, Carr & Connell Sur. T.D. 5,900 ft.; I.P. 188 B.P.D. through ⅝-in. choke.

Coletto Creek—Victoria County

American Liberty Oil Co. No. 4 Machalic R. Manchola Sur. Abd. 2,953 ft.

American Liberty Oil Co. No. 4 Pribil, R. Manchola Sur. R.U.

Keeran—Victoria County

Gulf Oil Corp. No. 8 Keeran, DeLeon Sur. Drlg. sh. 6,125 ft.

Placedo—Victoria County

Barnsdall-American Liberty No. 3 Pickering-Roos, J. M. Brownson Sur. Drk.

Barnsdall-Costa Oil Co. No. 4 Wheless, S.A.&M.G. Sur. No. 8. T.D. 4,770 ft.; 7-in. csg. at 4,760 ft.; W.O.C.

Barnsdall-Costa Oil Co. No. 2 Wright, S. A.&M.G. Sur. T.D. 4,764 ft.; 7-in. csg. at 4,750 ft.; W.O.C.

Benson & Jones No. 2 J. A. Janis, Wm. Rupley Sur. T.D. 4,744 ft.; 7-in. csg. on bottom.

Crown Central Oil Co. No. 2 Gebrover, J. M. Bronson Sur. T.D. 4,770 ft.; 7-in. csg. at 4,758 ft.; made gas; killed to deepen.

Harrison & Abercrombie No. 2 Sturdevant, S.A.&M.G. Sur. Drlg. sand and sh. 1,050 ft.

Smith-Gulf No. 1-B Henderson and Pickering, S.A.&M.G. Sur. Drlg. sh. 1,050 ft.

Sun Oil Co. No. 2 Schneeder, Wm. Rupley Sur. T.D. 4,767 ft.; 7-in. csg. at 4,-759 ft.; I.P. 38 B.P.D. on pump.

Clay Creek—Washington County

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. Drlg. sh. 4,982 ft.

Sun Oil Co. No. 7 H. Witt, J. F. Perry Sur. T.D. 1,213 ft.; 15-min. D.S.T.; showed 15 joints of oil.

Louise—Wharton County

Pure Oil Co. No. 1 Cochran, M.&C. Sur., sec. 29. T.D. 5,160 ft.; running csg.

Pure Oil Co. No. 5 McIntyre, Morris-Cummins Sur. Bldg. drk.

Pure Oil Co. No. 4 McIntyre, Morris-Cummings Sur. T.D. 5,155 ft.; 7-in. csg. at 5,138 ft.; I.P. 148 bbls. in 19½ hrs., 17/64-in. choke.

Pickett Ridge—Wharton County

Adrian Moore No. 1 W. P. Wilbeck, J. Tele Foriner Sur. Drlg. sh. 4,557 ft.

Crown Central Pet. Co. No. 1 J. J. Rod, W.C.R.R. Sur. Coring sh. and sand 4,-574 ft.

Texas Co. No. 2 Marek, George Reynolds Sur. Drlg. sh. and lime 5,789 ft.

Texas Co. No. 19-A Pierce, I.&G.N. Sur. No. 38. Drlg. sand 4,709 ft.

Texas Co. No 20-A Pierce. I.&G.N. Sur. Drlg. sh. and lime 4,138 ft.

Texas Co. No. 21-A Pierce, I.&G.N. Sur. No. 38. Drlg. sh. and bldrs. 1,973 ft.

Withers—Wharton County

Texas Co. No. 1-B Pierce, E.T. R.R. Sur., Abst. No. 108. Drlg. sand and sh. 6,-511 ft.

Texas Co. No. 6-C Pierce, J. Caldwell Sur. Drlg. lime 4,050 ft.

Texas Co. No. 7-C Pierce. J. Caldwell Sur. Drlg. sand, sh. and lime 1,944 ft.

GULF COAST WILDCATS

Austin County

W. H. Mitchell et al No. 1 F. Fenner, J. Fitzgibbons Sur. Drk.

Brazoria County

Gulf Oil Corp. No. 1 Fairfield, A. Robinson Sur. T.D. 8,398 ft.; P.B. and sdtkd. 6,259 ft.; drilled 6,277 ft.; stuck drill stem.

Strake Oil Corp. et al No. 1 D. K. Poole-J. W. Hardin Sur. T.D. 6,731 ft.; hole clean to 6,100 ft.

Texas Co. No. 3 Freeport Sulphur Co., C. Areola Sur. Drlg. sh. 4,663 ft.

Texas Gulf Prod. Co. No. 1 Sparks. Drlg. sh. 7,003 ft.

Chambers County

Glenn H. McCarthy No. 1 Pitt, J. M. Duran Sur. T.D. 8,006 ft.; abd.

Calhoun County

Continental Oil Co. No. 1 T. Vandenberg, sec. 12, Blk. H. Spudded.

Humble O. & R. Co. No. 2 Welder, Jose Maria Rios Sur. No. 1. T.D. 5,474 ft.; I.P. 125 B.P.D., 7/64-in. choke; T.P. 1,-700 lbs.; C.P. 2,150 lbs.

Colorado County

Terminal Oil Products Co. No. 1 R. S. Gillis, M. Middleton Sur. Abd. 4,396 ft.

Fayette County

Ben G. Barnett No. 1 McKinnon, A. Zumwalt Sur. S.D. 3,505 ft.

Galveston County

Sun Oil Co. No. J. D. Hughes, W. M. C. Baker Sur. T.A. 9,636 ft.

Grimes County

Crook Bros. No. 1 W. W. and J. C. Greir. Drlg. sh. 2,650 ft.

Hardin County

S. Hindman No. 1 Howth, A. J. Cotton Sur. S.D. 4,359 ft.

David B. MacDaniel No. 1 Nona Mills, E. E. Manvel Sur. Drlg. sh. 7,635 ft.

Harris County

Amerada Pet. Corp. et al No. 1 Dopslout C.W.R.R. Sur., Blk. 1, sec. 2. Coring broken sand and sh. 6,949 ft.

Bunte O. & G. Co. No. 1 Lobit et al, Benjamin Barrow Sur. Drk.

Jefferson County

Magnolia Pet. Co. No. 1 Funches, sec. 16, H.T.&B. Sur. Drlg. sdy. sh. 8,290 ft.

McSpadden et al No. 1 Burrell estate. Derrick.

Shell Pet. Corp. No. 1 Carpenter, M. E. Piveto Sur. Rig up.

Sun Oil Co. No. 1 Herbert & Broussard B. Blackman Sur., Abst. No. 2. Drlg. sdy. sh. 8,696 ft.

Matagorda County

John Deering No. 1 Estelle, Tone and Jameson Sur. T.D. 6,868 ft.; shot csg. 3,700 ft.

Heimerich & Payne. No. 1 Hawkins, D McCarthy Sur. T.D. 3,750 ft.; reaming to set screen.

Sun Oil Co. No. 1 Craig, Thomas Williams Sur. T.D. 6,326 ft.; P.B. 5,850 ft.; perf. csg. 5,340-95 ft.; testing.

Montgomery County

Walter Blumenthal No. 1 Delta Land & Timber Co., J. Beuhn Sur. Drlg. sh. 1,971 ft.

Chapman and Smith No. 1 Delta Land & Timber Co., T. Shepperd Sur. No. A-488. Abd. 5,123 ft.

Orange County

Tide Water Oil Co. No. 1 E. N. Brown, Mary Latham Sur. Rig up.

Polk County

Dick Schwab No. 1-A Kirby Lbr. Co., T. A. Sublett Sur. Drlg. sh. 4,444 ft.

Tyler County

McArthur & Mixon No. 1 D. D. Kounts, J. A. Honkins Sur. Bldg. derrick.

Wharton County

Pure Oil Co. No. 1 Paige, James Pirie Sur T.D. 9,200 ft.; perf. 7,680-7,700 ft.; cutting 6⅝-in. csg.; circulating at 7,829 ft.

Smith & McDannald No. 1-A Priesmeyer, Charles Riley Sur. Drlg. sh. 600 ft.

Sterling O. & R. Co. No. 1 Genzer-Jonathan Scott Sur. Drlg. sh. 6,745 ft.

S. W. TEXAS WILDCATS

Aransas County

Buckingham Oil Co. No. 1 McCampbell, sec. 41-42, James Arids Sur. T.D. 7,501 ft.; recovering 6,200-ft. pipe.

Atascosa County

Atascosa Trust No. 1 Domsch, 160 ft. S line, 300 ft. E line, 152-ac. lease, J. T. Russell Sur. 1,222. T.D. 3,519 ft.; set csg.; drlg. plug.

Bastrop County

Marts & Beavens No. 1 Hartford-Jennings. Drlg. 150 ft.

Bee County

J. F. Haworth No. 1 Copeland, 330 ft. N line, 2,100 ft. E line, O. Marshall Sur. T.D. 4,252 ft.; 7-in. csg. at 3,523 ft.; to test sand 3,420-71 ft.

Howeth & Singer No. 1 Voss, 990 ft. NW line, 330 ft. SW line, S. May Sur. Loc.

Luling Oil & Gas Co. No. 2-A Ruhman, 600 ft. S and 16 ft. W No. 1-A. R.U.

Marine Oil Co. No. 1 Ray, 360 ft. E line, 330 ft. N line, 40-ac. tr., Anna Birks Sur. No report.

Nichols & Quinn No. 1 Scott, Blk. 7, J. Molina Sur., Uranga grant. Loc.

Bexar County

Nick Morosis No. 1 T. O. de Ruiz, F. Rolen Sur. Drlg. 450 ft.

Brooks County

California Co. No. 1 B. Garcia, 465 ft. N and W lines lease. B. Garcia tract, Salinas Sur. Cg. 7,000 ft.

Caldwell County

W. D. Jennings No. 1 McMahon, 68-ac. tr., Pinchback Sur. T.D. 2,343 ft.; washing in.

Cameron County

W. W. Ely No. 1 Port Isabel Irrigation Co., Blk. 17, Shares 29, 30 and 31, P. I. I. Co. Subd. Loc.

Duval County

Atlantic Oil Prod. Co. and Darby Pet. Corp. No. 1-F Welder, 2,310 ft. N and E lines, Sur. 552. T.D. 2,804 ft.; making D.S.T.

Conservative Oil Co. No. 1, D.C.R.C. Sur. 51. R.U.

Frank Gravis No. 1 C. K. Gravis, 1,650 ft. SE line, 990 ft. SW line, Sur. 250. S.D. 5,040 ft.

Kepley Prod. Co. No. 1 Sevier, 330 ft. S line, 1,320 ft. E line, Sur. 71. T.D. 3,-410 ft.; P.B. 3,233 ft.; S.D.

Rio Bravo Oil Co. No. 1 Peters, 330 ft. S and E lines lse., Sur. 397. Cg. 2,025 ft.

Santa Clara Oil Co. (Atkins & O'Neil) No. 1 W. Serna, 330 ft. S and E lines, sec. 521. Cg. 3,510 ft.

Texas Co. and Ohio Fuel Co. No. 2-B, D.C.R.C. Sur. 193. Loc.

Windsor Oil Co. No. 2 Peters, Sur. 33. R.U.

Edwards County

Paul Teas No. 1 Stewart, C SE¼ sec. 3, G.C.&S.F. Sur. S.D. 5,270 ft.

Guadalupe County

J. E. Clark No. 1 Anderson, Green De Witte Sur. Drlg. 2,013 ft.

J. E. Clark No. 1 Williams, DeWitte Sur. T.D. 2,524 ft.

Hidalgo County

Gerald O. & G. Co. No. 1 Nelson Mortgage Co., Blk. 38, Lot A, LaDonna Tr. Drlg. hard sh. 5,372 ft.

Gulf States Oil Co. No. 3 John Engleman, Lot 3, Blk. 70. T.D. 6,812 ft.; sh.; 7-in. csg. at 6,764 ft.

Helen K. Maxwell No. 1 Hidalgo Wtr. Dist. No. 2, Lot 11, Blk. 20, Alamo Land & Sugar Co. Subd., Alamo Tr. Perf. 650-56 ft.; bailing Wtr. S.O.

Quintana Petroleum Co. No. 1 John C. Engleman, Lot 10, Blk. 94, Las Mestanas grant. Cg. 8,904 ft.

Dayle Smith No. 1 Fairbanks & Young, Blk. 44, Porc. 46. Cg. 1,856 ft.

Jim Hogg County

Magnolia Pet. Co. No. 1 Magnolia-Holbien, Sur. 35, Arriba grant, R.U.

Theo. Hicks et al No. 1 Kohler, C W½ sec. 9, Novacitas grant. Loc.

Knode et al No. 1 Saunders, Sh. 3, Sur. 17, Lasc Animas grant. Drlg. sd. and sh. 2,776 ft.

Jim Wells County

Edwin M. Jones No. 1 Robt. Adams, 446 ft. S and W lines, Blk. 47, Waldron Oil & Gas Subd., Adams ranch. Loc.

R. A. Graddy No. 1 Bennett, 330 ft. N and W lines, Lot 87, sec. 76. Spudding.

Glat & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines, Sur. 151. Spudded and S.D.

Karnes County

R. L. Barnett No. 1 fee, NE cor. 568-ac. tract. M.I.M.

DeGraffe & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell League. Spudded in.

Kerr County

Auld & Evans No. 1 Heffner, 660 ft. N line, 330 ft. E line, sec. 13, U.R. 5,870 ft.

Eastland Oil Co. No. 7 Love, 660 ft. N Evans & Gant No. 1 Love, Martinez Sur. No. 1,594. T.D. 2,432 ft.; D.&A.

LaSalle County

Davenport & Talbott No. 1 Watkins, 1,-610 ft. S line, 330 ft. E line, Sur. 102. Drlg. 3,129 ft.

Paul Meader No. 1 Reed, sec. 136. Fsg. 2,790 ft.

W. H. Vernon No. 1 Las Abias ranch, 150 ft. N line, midway E and W lines, sec. 726. Loc.

Live Oak County

W. A. Brooks No. 1 Terrill, 1,000 ft. NE R.R., 1,500 ft. S line lse., Juan Houligan Sur. T.D. 1,080 ft.; S.D.

Dirks Bros. No. 1 Geo. West Est., 1,361 ft. SE line, 340 ft. NE line, 80-ac. tract. Drlg. 2,420 ft.

R. H. Feltner No. 1 J. T. Carter, 1,847 ft. NW line, 350 ft. NE line, 120-ac. tract, sec. 319. T.D. 3,466 ft.; drlg. in sdtrk. hole at 3,152 ft.

J. J. McRoberts No. 1 Mahoney, 3,100 ft. SW Junction Three Rivers, Tilden Highway and Thomas Henry Sur. lines, 150 ft. N. Set sur. csg. 40 ft.; W.O.C.

Windsor Oil Co. No. 1 B. E. Stolte, cen. tr., Wm. Kundy 3,690-ac. blk. Drk.

Milam County

J. C. Kilgore et al No. 1 W. R. Newton, James Reed Sur. Spudding in.

McMullen County

John F. Camp. No. 3 Byrne, 100-ac. tr., B. Odem Sur. Drlg. 500 ft.

Climax Oil Co. No. 1 Lark, 150 ft. S and W lines, Blk. 96, Scrugham Sur. Loc.

R. J. Hill No. 1 Richardson, Sur. 158. Set sur. csg.; T.D. 1,600 ft.; S.D.

Rainer Oil Co. No. 1 Hagist, 330 ft. S and W lines, SW¼, SE¼, Sur. 35. M.I.M.

Reliance Oil & Roy. Co. and Santa Clara Oil Co. No. 1 Shiner, 330 ft. N line, 150 ft. E line, NW¼, W½, sec. 80, Shumway Subd. Drlg. 120 ft.

Nueces County

V. L. Blanchard No. 1 T. H. Isensee, 330 ft. N and E lines, Blk. 8, R. Schaffer Lands Subd. M.I.R.

W. D. Hines No. 1 Flato, NW cor. Driscoll Townsite. Cg. sh. 3,775 ft.

M. F. Hurlburt No. 1 Phillips, sec. 8, Flour Bluff Garden Tracts. Cg. stky. sh. 6,393 ft.

O. W. Killam No. 1 Ellick, 330 ft. N and E lines tr., sec. 109, Paul Subd. Set csg. 3,822 ft.; saturated sd. from 3,892-98 ft.

Terminal Oil Prod. Co. No. 1 Thurman, 660 ft. N and W lines, SW¼, sec. 10. M.I. rig.

G. M. Richardson No. 1 Gerhardt, 660 ft E line, 330 ft. N line, sec. 79. Spudded.

Southern Minerals Corp. No. 2 Rand Morgan, 330 ft. N line, midway E and W lines, Lot 42, Roberts Subd., A.B.&M. Sur. 411. R.U.

San Patricio County

Benedum & Trees Oil Co. No. 1 Jones, 1,650 ft. E line, 990 ft. S line, NW¼ sec. 65. D.&A. 6,348 ft.

Benedum & Trees Oil Co. No. 2 Welder, sec. 19. Drlg. sd. and sh. 6,126 ft.

C. B. Bunte No. 1 Mayfield, 121 ft. W line, 237 ft. N line, Tr. 11, Ross Subd. M.I.M.

Joe Lundins No. 1 Welder, 330 ft. N and W lines, sec. 30, Paul Subd. M.I.M.

Portilla Oil & Gas Co. No. 1 Welder, 466 ft. E line, 2,333 ft. N line, sec. 5. Drlg. sh. 1,893 ft.

Starr County

J. F. Anderson No. 1 Ysaguirre, Tr. 1,

Porc. 79, J. of Camargo. Drlg. 1,115 ft.
Coreta Oil Co. No. 1 Pena, 160 ft. S and E lines, Sh. 80, Porc. 81. T.D. 1,500 ft.; S.D.
O. W. Killam No. 1 Sanford Ricaby, 330 ft. W line, Porc. 83, J. of Camargo, 300 ft. S of Highway 4. T.D. 1,516 ft.; fsg.
Larkin & Warr No. 1 Kelsey-Bass, 660 ft. N line, 408 ft. E line, Lot 8, Porc. 87. Drlg. 2,175 ft.
Ed Leach No. 1 Wood Est., 300 ft. W line E 3/7, Porc. 84. S.D. 2,740 ft.
Ed Leach No. 2 Wood Est., Por. 84, J. of Camargo (old Weyel No. 1 Wood) W.O. T.D. 2,160 ft.; P.B. 378 ft.; drlg. plug 700 ft.
Porter Evans et al No. 1 Starr County Cattle Co., cen. Lot 14, Sh. 60, Porc. 89, J. of Camargo. Loc.

Webb County

Illinois Pet. Co. No. 1 J. H. Kirkpatrick, 330 ft. S and E lines, NW¼, Blk. 1, sec. 16. Set sur. csg.; W.O.C. 40 ft.

Willacy County

M. E. Morton et al No. 1 Santa Rosa, 330 ft. N and E lines, Lot 12, Blk. 31, Santa Rosa Subd., Sh. 44. Loc.
Shell Pet. Corp. No. 1 Yturria Land & Cattle Co., 990 ft. S and E lines, Share 64, San Juan de Carricitos grant. Drlg. 5,370 ft.

Wilson County

A. G. Reimenschneider No. 2 L. Harrell 750 ft. NE line, 2,800 ft. NW line, Barrera Sur. No report.

Zapata County

Oklahoma Co. No. 1 Sanchez, Sh. 9, Blk. 37, Sanchez ranch. D.&A. 3,120 ft.
O. J. Perren No. 1 Uribe, 330 ft. NE line, 227 ft. SE line, Blk. 31, Borrego grant. R.U.

Zavalla County

Bay Oil Co. No. 1 Calliant, sec. 43, A. B.&M. Sur. Drlg. sdy. lime and sh. 4,960 ft.
W. L. Bridges No. 1 Price & Flowers, 1,320 ft. N and W lines, Blk. 1, sec. 19. T.D. 450 ft.; S.D.
Frank Buttram No. 1 Whitecotton, 2,400 ft. N line, 300 ft. W line, A.B.&M. Sur. Drlg. sandy shale 4,223 ft.
Leona Oil Co. and Witherspoon Oil Co No. 1 West, 330 ft. E line, midway N and S lines, sec. 1, Bustillo Sur. S.D. 6,020 ft.

S. W. TEXAS PROVEN

Dirks—Bee County

Dirks Bros. and McMurray No. 2-B Harris, 200 ft. N line, 990 ft. W line, 61.9-ac. tr., J. L. Dugat Sur. Fsg. 3,300 ft.
Sun Oil Co. No. 7 Page, 990 ft. SE and SW lines tr., Young Sur. Sd. 3,819-62 ft.; comp. 104 B.P.D. on ¼-in. choke.

Pettus—Bee County

United Prod. Co. No. 53 Ray, Thos. Hanson Sur., Abst. 172. Sd. 3,934-35 ft.; deepening.

Ray—Bee County

N. V. Duncan No. 3-A Campbell, B.&B. Sur., Abst. 139. R.U.

Alta Verde—Brooks County

Fairway Prod. Co. No. 1 Singer, Sur. 312. Loc.
Nordan, Morris & Nash No. 1 Singer, 400 ft. E line, 835 ft. S line, Sur. 312. Sd. 892-902½ ft.; set csg. 892 ft.; W.O.C.
Pedernal Oil Co. No. 1 Singer, 330 ft. S line, 280 ft. W line, NW¼, SW¼, Sur. 436. T.D. 1,003 ft.; stdg.

Dale—Caldwell County

W. D. Moore No. 1 fee, 330 ft. NW and NE lines tr., Swearengen Sur. Comp. 200 B.P.D.; T.D. 2,007 ft.

Salt Flat—Caldwell County

Chiquita Oil Co. No. 1 Hickman, G. Hinds Sur. T.D. 2,273 ft.; set csg.; W.O.C.
Louis Crouch No. 1 Davis, A. Floyd Sur. T.D. 2,680 ft.; set csg.; running tbg.

Driscoll—Duval County

Continental Oil Co. No. 9-A Sevier, Sur. 23. Sd. 3,330-41 ft.; tested gas; drlg. 3,390 ft.

Government Wells—Duval County

Magnolia Pet. Co. No. 2 Harrall, Sur. 64. Fsg. 2,317 ft.
Morris Stein No. 1 Hahl, 160-ac. tract, Sur. 47. Spudded in.
J. T. Stover No. 1 Hester, 330 ft. S and E lines, SW¼, NE¼, Sur. 47. No report.

Hagist—Duval County

Marzo Oil Co. No. 3 Hagist, 660 ft. SW of No. 1, Sur. 6. T.D. 2,171 ft.; D.&A.

Hoffman—Duval County

Duval Oil Corp. No. 1 Hoffman, 990 ft. N line, 330 ft. NE line tr., Sur. 118. Sd. 2,875-80 ft.; comp. 13 B.P.H.
Duval Oil Corp. No. 3 Hoffman, sec. 118. M.I.M.
Duval Oil Corp. No. 4 Hoffman, sec. 118. Spudded in.
Duval Oil Corp. No. 3 Ruiz, 330 ft. S line, 990 ft. W line, sec. 119. Sd. 2,889-2,905 ft.; comp. est. 100 B.P.D.
W. C. McBride No. 1 Cuellar, Sur. 123. R.U.
W. D. Maston No. 1 Ruiz, Sur. 138. Set Sd. 2,889-96 ft.; W.O.C.
Standard of Kansas No. 3 Hoffman, 80-ac. tr., Sur. 118. Comp. est. 195 B.P.D.
Standard of Kansas No. 4 Hoffman, Sur. 118. Testing; T.D. 2,904 ft.
Standard of Kansas No. 7 Hoffman, Sur. 118. Drlg. 2,315 ft.
Sun Oil Co. No. 1 Sutherland, Sur. 68, T.D. 2,116 ft.; made gasser; killed and pulling tubing; to rework.

N. Kohler—Duval County

Navarro Oil Co. No. 1 Peters, Sur. 39. R.U.
Windsor Oil Co. No. 2 Peters, 2,304 ft. S line, 3,269 ft. E line, Sur. 33. Drlg. 2,774 ft.

Labbe—Duval County

Stanolind O. & G. Co. No. 4 Farmers Life Ins., Sur. 416. Drlg. 3,512 ft.

Loma Novia—Duval County

Bridwell Oil Co. No. 3-A Hubbard, sec. 71. Skidding on.
Bridwell Oil Co. No. 8-B Hubbard, Sur 75. Completing.
Bridwell Oil Co. No. 9-C Hubbard, Sur. 75. Skidding on.
Duval Oil Corp. No. 14-B Moody, Sur. 60. Sd. 2,538-49 ft.; comp. 49 B.P.D.; T.D. 2,650 ft.
C. Hamill No. 20 Hubbard, Sur. 77. Drlg. 2,614 ft.
C. Hamill No. 33 Hubbard, Sur. 77. Comp. 30 B.P.H.; sd. 2,623-40 ft.
Highland Oil Co. No. 11 M. C. Hubbard, sec. 72. Drlg. 2,772 ft.
Highland Oil Co. No. 12 M. C. Hubbard, sec. 12. Sd. 2,746-71 ft.; comp. 210 B. P.D.
Humble O. & R. Co. No. 52-B Hubbard, Sur. 72. Sd. 2,740-60 ft.; comp.; no gauge.
Humble O. & R. Co. No. 35-B Hubbard, Sur. 72. T.D. 2,720 ft.; comp. 15.13 B. P.H. on ½-in. choke.
Humble O. & R. Co. No. 40-B Hubbard, Sur. 72. Drlg. sh. 2,484 ft.
Humble O. & R. Co. No. 53-B Hubbard, Sur. 72. M.I. drk.
Humble O. & R. Co. No. 63-B Hubbard, Sur. 72. Loc.
Humble O. & R. Co. No. 1-C Hubbard, Sur. 72. T.D. 2,769 ft.; comp. on pump.
Humble O. & R. Co. No. 10 Vela, N½ Sur. 42. Sd 2,784-92 ft.; set csg. 2,776 ft.; W.O.C.
Magnolia Pet. Co. No. 30 Hahl, Sur. 67. Set csg. 2,667 ft.; W.O.C.
Magnolia Pet. Co. No. 34 Hahl, Sur. 67. Comp. 14 B.P.H. on ½-in. choke; T.D. 2,640 ft.
Magnolia Pet. Co. No. 36 Hahl, Sur. 67. Set csg. 2,631 ft.; W.O.C.
Magnolia Pet. Co. No. 37 Hahl, Sur. 67. Loc.
Reynosa Oil Co. No. 3-A Davidson, NE¼. Sur. 114. Comp. 10 B.P.H.; sd. 2,557-71 ft.
Rodney DeLange No 4 DuVon, Sur. 76. T.D. 2,726 ft.; comp. 100 B.P.D. on pump.
Rodney DeLange No. 4 Moody, Sur. 76. R.U.
Rosan Texla Oil Co. No. 14 Hubbard, Sur. 84. R.U.
Shell Pet. Corp. No. 1 Bishop, Sur. 59. T.D. 2,563 ft.; comp. 10 B.P.H.
Shell Pet. Corp. No. 26 Hubbard, Sur. 77. Set csg. 2,700 ft.; sd. 2,705-15 ft.
Shell Pet. Corp. No. 31 Hubbard, Sur. 77. Drk.
Shell Pet. Corp. No. 32 Hubbard, E½, Sur. 77. Sd. 2,742-45 ft.; comp. 49 B.P.H.
Texas Co. No. 29 Wendt, Sur. 68. Swabbing in.
Texas Co. No. 39 Wendt, Sur. 68. Top sd. 2,680 ft.; comp. 850 B.P.D. on ½-in. choke.
Texas Co. No. 40 Wendt, Sur. 68. Drlg. 521 ft.
Texas Co. No. 42 Wendt, Sur. 68. Set csg. 2,603 ft.; W.O.C.
Texas Co. No. 14 B.C.C., Sur. 59. Sd. 2,530-36 ft.; comp. 12 B.P.H. on ¾-in. choke.
Valley Osage Oil Co. No. 6 M. C. Hubbard, Sur. 75. Drlg. 2,570 ft.

Loma Vista—Duval County

Atlantic Oil Prod. Co. No. 1 J. F. Welder hrs., 330 ft. N and E lines, 160-ac. tr., Sur. 103. D.S.T. 2,726-51 ft.; gas and 170 ft. drlg. mud cut with gas; prep. second D.S.T.
Shell Pet. Corp. No. 1-A Welder, 1,040 ft. W line, 330 ft. N line lease, Sur. 103 (new hole). Cg. 2,463 ft.

Piedra Lumbre—Duval County

Humble O. & R. Co. No. 2-B D.C.R.C., N½ NE¼, Sur. 95. Comp. gasser; T.D. 2,129 ft.
Magnolia Pet. Co. No. 3 D.C.R.C., NW¼, Sur. 95. Drlg. 1,166 ft.
Texas Co. No. 17 D.C.R.C., SW¼, Sur. 100. Sd. 1,953-75 ft.; comp. est. 15 B. P.H.
Texas Co. No. 18 D.C.R.C., Sur. 95. Drlg. 856 ft.

Seven Sisters—Duval County

Atlantic Oil Prod. Co. No. 12-D Welder, Sur. 113. Sd. 2,480-88 ft.; comp. 10 B. P.H.
Atlantic Oil Prod. Co. No. 1-G Welder, Sur. 102. Drlg. 1,827 ft.
Buchanan & Blanco Oil Co. No. 12 Welder, 75 ft. S No. 7, Sur. 591. Cg. 2,195 ft.
S. B. Cloyes No. 1 Serna, 330 ft. N and E lines tr., Sur. 384. Loc.
Dulce Oil Co. No. 3-B Serna, SE¼, Sur. 384. Set csg. 2,179 ft.; W.O.C.
Humble O. & R. Co. No. 10 Smith, Sur. 384. T.D. sd. 2,463 ft.; comp. 225 B.P.D.
Humble O. & R. Co. No. 12 Smith, Sur. 382. Set csg. 2,426 ft.; W.O.C.
Humble O. & R. Co. No. 13-A Serna, SW¼, Sur. 384. Sd. 2,479-85 ft.; running tbg.
Humble O. & R. Co. No. 9-B Serna, Sur. 384. Sd. 2,484-96 ft.; comp. 32.82 B.P.H. on ½-in. choke.
Humble O & R. Co. No. 12-B Serna, Sur. 384. Set sur. csg. 67 ft.; W.O.C.
Humble O. & R. Co. No. 4 Wright, Sur. 118. T.D. 2,509 ft.; comp.; no gauge.
Humble O. & R. Co. No. 5 Wright, Sur. 118. Set sur. csg. 54 ft.; W.O.C.
Navarro Oil Co. No. 3 Welder, Sur. 383. Comp. 19½ B.P.H. on ⅜-in. choke; sd. 2,440-55 ft.
Navarro Oil Co. No. 4 Welder, Sur. 383. Sd. 2,456-65 ft.; testing.
Parr Oil Co. No. 4 Welder, Sur. 383. Drlg. 1,810 ft.
Reliance Oil & Royalty Co. and Henderson & Harvey No. 1 Drummond (new hole), 330 ft. S and E lines, Sur. 308. Sd. 2,525-38 ft.; D.S.T. 1,300 ft. oil in 10 min.; set csg.; W.O.C.
Reliance Oil & Royalty Co. No. 2-A Telford, Sur. 386. Sd. 2,671-92 ft.; recmtg.
Reliance Oil & Royalty Co. No. 9 Welder, Sur. 381. Loc.
Santa Clara Oil Co. No. 2-B Welder, Sur. 383. Sd. 2,474-85 ft.; comp. 22.6 B.P.H. on ¼-in. choke.
Santa Clara Oil Co. (Atkins & O'Neil) No. 4-B Welder, Sur. 383. Sd. 2,457-90 ft.; D.S.T. 2,483-90 ft.; 1,000 ft. oil in 10 min.; set csg.; W.O.C.
Santa Clara Oil Co. (Atkins & O'Neil) No. 1-D Welder, sec. 381. Cg. 2,377 ft.
Santa Clara Oil Co. No. 10-D Welder, Sur. 383. T.D. 2,441 ft.; comp. 22 B.P.H. on ¼-in. choke.
Shell Pet. Corp. No. 7-A Welder, Sur. 385. T.D. 2,468 ft.; comp. 12 B.P.H.
Shell Pet. Corp. No. 8-A Welder, Sur. 385. Prep. to test 2,436-72 ft.
Texas Co. No. 1 Badgley, Sur. 307. Drlg. 1,840 ft.
Westheimer & Daube No. 10 Campos, Sur. 224. Drlg. 2,014 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 6 Halff & Oppenheimer, 466 ft. S and W lines, S. A. Ditch Co., Sur. No. 1,104. Reworking.
Amerada Pet. Corp. No. 7 Halff & Oppenheimer, 1,320 ft. W line, 330 ft. S line, J. H. Gibson Sur. No. 16. T.D. 3,926 ft.; P.B. 3,910 ft.; W.O. tools.
Amerada Pet. Corp. No. 2 Smith, 466 ft. E line, 2,771 ft. N line tr., J. V. Mason Sur. Drlg. 3,896 ft.
Combs & Oakes No. 1 Arp, 330 ft. S and E lines, 102-ac. tr., S. Blair Sur. 297. Drlg. 1,927 ft.

North Pettus—Goliad County

Jane Oil Co. No. 2 Lackey & Welder, 660 ft. SE of No. 1, J. Gomez Sur.; sd. 3,678-86 ft.; set csg. 3,677 ft.; testing.
Jane Oil Co. No. 9 Mudd, B.&B. Sur. 25. Sd. 3,705-12 ft.; set csg. 3,703 ft.; W. O.C.
Magnolia Pet. Co. No. 1 Weldon, J. Gomez Sur. T.D. 3,685 ft.; comp. 5½ B.P.H. on ¼-in. choke.
Sun Oil Co. No. 6 Scarborough, E. Talley Sur. Drlg. 2,042 ft.
H. H. Weinert No. 2 Lackey & Welden, 423 ft. SE line, 257 ft. NE line, J. Gomez Sur. Drlg. 3,029 ft.

Clark—Guadalupe County

Eickenroht & Gallagher No. 1 Johns, 130 ft. E line, 450 ft. N line, 840-ac. tr., DeWitt Sur. 13. T.D. 3,134 ft.; S.D.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande L. & I. Co., 4,000 ft. SE of No. 1 Farm Tr. 2,309, Blk. 59. T.D. 7,597 ft.; S.D. for orders.
Union Sulphur Co. No. 8 American Rio Grande L. & I. Co., 660 ft. N & E lines Tr. 2,120, Blk. 87. T.D. 7,822 ft.; P.B. 7,593 ft.; drlg. in.
Union Sulphur Co. No. 9 American Rio Grande L. & I. Co., Farm Tr. 2,275, Blk. 59. Cg. 7,108 ft.

Samfordyce—Hidalgo County

J. H. Anderson No. 5 Guerra, Tr. 254, Porc. 40. Sd. 2,745-53 ft.; set csg. to perforate.
J. T. Barlow No. 1 Marta Flores de Chapa, Tr. 250, Porc. 39 (workover). Comp. as gasser; sd. 2,953-55 ft.; M.I.R.; to rework.
Barnett Pet. Corp. No. 3-A Sheldon, Tr. 11, Porc. 41. Spudded.
Navarro Oil Co. No. 3 F. B. Guerra, Share 12, Porc. 41. Sd. 2,765-84 ft.; set csg.; W.O.C.
Rogers & Rogers No. 5 Guerra, 230 ft. N and E lines, Tr. 254, Porc. 38, 39 and 40. M.I.M.
Weekly Oil Corp. No. 1 George, Tr. 13, Porc. 41. Comp. 45 B.P.D. on 3/32-in. choke.
Weekly Oil Corp. No. 2 Lula George, Tr. 12, Porc. 41. M.I.M.
G. W. Wheeler No. 2 Felipe Farias, Tr. 255, Porc. 39. Drlg. sh. 1,260 ft.

Bentonville—Jim Wells County

La Jita Corp. No. 1 Pope, 660 ft. S and E lines, sec. 20, King Farm Lots. M.I.M.
Stanolind O. & G. Co. No. 1 Bowers, 330 ft. S and E lines, sec. 14, King Farm Lots. M.I.M.
Stanolind O. & G. Co. No. 1 Raney, 330 ft. N and E lines, sec. 16. R.U.
Stanolind O. & G. Co. No. 1 Saln, 330 ft. S and W lines, sec. 18. R.U.
Stanolind O. & G. Co. No. 1 Thompson, 330 ft. N and W lines, NE¼ sec. 4. M.I.M.
Texon and Lucey No. 1 Dodd, 330 ft. S and E lines, sec. 15, R. King Farm Lots Subd. Cg. 5,419 ft.

Sandia—Jim Wells County

J. E. Walsh No. 2 Wade, Lot 2, Blk. "C," Bode Subd. T.D. 1,500 ft.; S.D. for fuel.

San Diego—Jim Wells County

Houston Oil Co. No. 1 Hawkins & Wallace, 990 ft. S and E lines, Blk. 11. Recmtd. through perforations 2,957-61 ft.; W.O.C.

Calliham—McMullen County

Wilkerson & Lightfoot No. 7 Lark, 510 ft. N line, 150 ft. E line, Blk. 113, Scrugham Sur. Comp. 52 B.P.D.; sd. 1,031-38 ft.

Loma Alta—McMullen County

V. G. Schimmel No. 1 Hagist, 330 ft. N and E lines, SW¼, Sur. 103. Cg. 1,916 ft.

King—Nueces County

La Jita Oil Corp. No. 2 King, 660 ft. N and W lines, sec. 24. T.D. 6,003 ft.; T.A.

Saxet Heights—Nueces County

Aaron Cohen No. 1 fee, 330 ft. E line, midway N and S lines, 45-ac. tr., Villareal Sur. Comp. 75 B.P.D.; T.D. 4,075 ft.
Bartlett & Reed No. 1 Carson, SW cor., 20-ac. tr., Villareal Sur. Set csg. 4,126 ft.; perf. 4,078-84 ft.; made gas; reworking.
Capitol Oils, Inc., No. 1 L. Ayres, cen. 5-ac. tr., Villareal Sur. Sd. 4,069-80 ft.; reworking.
Capitol Oils, Inc. No. 1 Gravis, 2.86-ac. tr., Blk. 11, Bancroft Farm Lots. Drlg. 2,684 ft.
Conroe Drlg. Co. No. 4 McBride, 660 ft. E line, 330 ft. S line, 58-ac. tr. Comp. 4,098-4,100 ft.; 8 B.P.H.
Cherokee Oil Co. No. 1 Groescher, Villareal Sur. Drlg. 3,627 ft.
Cherokee Oil Co. No. 1 Holder, 5-ac. tr., Villareal Sur. Sd. 4,071-75 ft.; comp. 9 B.P.H. on ¼-in. choke.
Corpus Christi Ref. Corp. No. 1 fee, 333 ft. S line, midway E and W lines, 12.16-ac. tr., J. H. Sigler Sur. Set csg. 4,073 ft.; W.O.C.
J. K. Culton No. 1 Cantwell, 250 ft. W line, 510 ft. S line tr. M.I.M.
Tom Graham No. 1 Harmon-Flood, Blk. 4 and 5, Ellendale Gardens No. 1. R.U.
Tom Graham No. 1 Kaiser, Villareal Sur. T.D. 4,077 ft.; rng. tbg.
Graham & Roberts No. 3 Carver, 142.8 ft. E line, 200 ft. N line, 4.04-ac. tr., Blk. 4, Ellendale Gardens No. 2. T.D. 4,081 ft.; comp. 140 B.P.D.
Graham & Roberts No. 1 Curry, Villareal Sur. Sd. 4,080-85 ft.; brought in as gasser; reperforating 4,073-77 ft.
Graham & Duncan No. 1-A Priour, Villareal Sur. Tested oil 4,064-68½ ft.; set csg.; W.O.C.
D. H. Hawn No. 1 Priour, 5-ac. tr., Oak Park Addn. Sd. 4,067-75 ft.; set csg.; W.O.C.
D. H. Hawn No. 1 Thomason et al, cen. 2.5-ac. tr., Villareal Sur. Comp. 10 B. P.H.; sd. 4,067-75 ft.
Johnson et al No. 1 Cowles, 160 ft. W line, 75 ft. S line tr. T.D. 3,500 ft.; fsg.
Johnston et al No. 1 Werner, Blks. 11, 12, Ellendale Gardens No. 1. Set csg. 4,081 ft.; W.O.C.
Port O. & G. Co. No. 1 Country Club, C Lot 20, Villareal Sur. Perforated 4,080-85 ft.; cleaning.
Port Oil & Gas Co. No. 4 Country Club, Lot 20, Villareal Sur. Spudded in.
Port Oil & Gas Co. No. 1 Gibson, cen. 1.25-ac. tr., Blk. B, Harbor View Addn. Drlg. 3,188 ft.
Republic Nat. Gas Co. No. 4-B Baldwin, 790 ft. SE of No. 2, 330 ft. NE line, Blk. 19. T.D. 4,100 ft.; comp. 60 B.P.D.
W. A. Richardson No. 2 Edwards, 10-ac. tr., Villareal Sur. Drk.
Hiram Reed No. 1 Quinn, Villareal Sur. T.D. 4,117 ft.; swabbing.
J. B. Salmon No. 1 Clark, Blk. 4, Oaklawn Subd. T.D. 4,076 ft.; jetting.
Taylor Ref. Co. No. 4 Corpus Christi Golf and Country Club, 83-ac. tr., Villareal Sur. Set csg. 4,080 ft.; W.O.C.
Taylor Ref. Co. No. 2 Corpus Christi Country Club, 250 ft. SW line, 1,005 ft. SE line, 73-ac. tr. Testing 4,079 ft.
Westgate Oil Co. No. 2 Sturm, 730 ft. S No. 3, 150 ft. W line, 83-ac. tr. Set csg. 500 ft.; W.O.C.
Westgate Oil Co. No. 6 Sturm est., 150 ft. S and W lines, 89-ac. tr., Villareal Sur. Cg. 4,085 ft.
Winn Drlg. Co. No. 1 Starr, 125 ft. NW line, 150 ft. SW line, 3.39-ac. tr., Blk. 11, Bancroft Farm Lots. Drlg. 3,774 ft.

Saxet—Nueces County

Coastland Oil Co. and Keystone Royalty No. 1 Page Bros. (workover), 330 ft. N and E lines, S 50 acres, 104-ac. tr., Sh. 2, Frank Subd. Drlg. 3,572 ft.
W. W. Chapman No. 1 Morgan Clark, 330 ft. S and E lines, 322-ac. tr., Sur. 405. (Old Texas Coast Oil Co. well) workover. T.D. 4,966 ft.; drk.
Conroe Drlg. Co. No. 1 Frank Bliss, W 80-ac. tr., J. W. Stevens Sur. No. 406. Sand 5,814-31 ft.; running tubing.
Conroe Drlg. Co. No. 1-B Rand Morgan, 330 ft. N line, 990 ft. E line lease, Sur. 403. Set csg. 150 ft.; W.O.C.
Conroe Drlg. Co. No. 1-A Rand Morgan, 990 ft. E line, 330 ft. N line, Sur. 403. Drk.
Great States Oil Co. No. 1 Smith, 330 ft. W line, 125 ft. N line, 11-ac. tr. Spdd.
W. B. Hinton No. 1 E. B. Cole, 60-ac. tr., Villareal Sur. T.D. 4,871 ft.; testing.
A. F. Holliday No. 2 Griffith, 347 ft. W of No. 1, G. Frank Sur. 416. Drlg. 5,350 ft.
A. F. Holliday No. 3 Griffith, 330 ft. N and E lines, 99.79-ac. tr., Frank Sur. 416. R.U.
A. F. Holliday No. 4 Hutchins-Stillwell, 330 ft. S and W lines, Blk. 30, Sheppard Farm Lands. R.U.
A. F. Holliday No. 3 Hutchins, sec. 30, Coring 5,775 ft.
Houston Oil Co. No. 3 Harrell, Blk. 19, Sheppard Farm Lots. Sd. 4,861-68 ft.; Swabbing.
Houston Oil Co. No. 11 Rand Morgan,

sec. 7, Rge. 5. Set sur. csg. 134 ft.; W. O.C.

Morgan Gulf Oil Co. No. 1 Rand Morgan, 1,650 ft. E line, 330 ft. S line, B.S.&F. Sur. 405. Sand 4,070-95 ft.; completing.

Morgan Gulf Oil Co. No. 3 Rand Morgan, 990 ft. N line, 330 ft. E line, Sur. 403. Drlg. 3,930 ft.

Morgan Gulf Oil Co. and Great States Oil Co. No. 1 Humphreys, 330 ft. S line, 990 ft. W line, Stevens Sur. 406. Drlg. 3,012 ft.

Morgan Gulf Oil Co. and Great States No. 1-B Rand Morgan, B.S.&F. Sur. 404. T.D. 4,091 ft.; set csg.; W.O.C.

Maryland Corp. and R. M. Hutchins No. 1 Gonzales, cen. Blk. 8, Clarkwood Townsite. Drlg. 1,070 ft.

Phillips Pet. Co. No. 3 Hutchins, 330 ft. N and W lines, Blk. 19, Sheppard Farm Lots. Spudded in.

Renwar Oil Co. No. 1 Morgan, sec. 315. Sd. 4,421-25 ft.; comp. 25 B.P.H. on ¼-in. choke.

W. A. Richardson No. 1 W. S. Hutchins (workover), 330 ft. S and E lines, 80-ac. tr., Sh. 2, Frank Sur. 416. T.D. 5,000 ft.; M.I.M.

W. A. Richardson No. 4 Meredith, cen. Blk. 9, Clarkwood Townsite. Drlg. 210 ft.

Richardson Pet. Co. No. 1 Hugo Isensee, cen. 14.4-ac. tr., C. Land Sur. 404. Drlg. 3,500 ft.

Richardson et al No. 3 Sedwick, Sur. 586. Sd. 4,543-57 ft.; comp. est. 200 B. P.D. on 5/16-in. choke.

Shell Pet. Corp. No. 3 Flato, 330 ft. E and S lines lease, 40-ac. tr., I. Dunn Sur., M.I.R.

Sinclair Prairie Oil Co. No. 2 Isensee, 330 ft. S and E lines, 80-ac. tr., C. Land Sur. 404. M.I.M.

Southern Minerals Corp. No. 2 Rand Morgan, Blk. 42, Roberts Subd. Set csg. 540 ft.; W.O.C.

Southern Minerals Corp. No. 4 Bliss, Sur. 406. Drlg. 5,750 ft.

Southern Minerals Corp. No. 1 Isensee, C. Land Sur. 404. Spdg. in.

Southern Minerals Corp. No. 1 Mastin, G Frank Sur. 416. Sd. 5,803-21 ft.; comp. 220 B.P.D.

Southern Minerals Corp. No. 2 Mastin, 125-ac. tr., G. Frank Sur. 416. Drlg.

Southern Minerals Corp. No. 5 Smith, Blk. 4, H. B. Sheppard Farm Lots. Cg. 4,760 ft.

Texon Royalty Co. No. 1 McElroy, 115 ft. N line, 100 ft. W line, 40-ac. tr., Gallagher Sur. D.S. stuck 4,100 ft.; stdg.

Plymouth—San Patricio County

Humble O. & R. Co. No. 2 Bevly, 466 ft. N line, 315 ft. E line, Blk. 8, Sur. 35. Set sur. csg. 627 ft.; W.O.C.

Magnolia Pet. Co. No. 7 Corpus Christi Bank, 932 ft. E of No. 6, sec. 24. T.D. 5,884 ft.; D.S.T. 960 ft. oil in 10 min.; 75 lbs. W.P.; W.O.C.

Plymouth Oil Co. No. 47-C Welder, 2,187 ft. S line, 1,433 ft. W line, sec. 49. Drlg. 2,830 ft.

Plymouth Oil Co. No. 48-C Welder, 1,213 ft. N line, 1,188 ft. E line, sec. 49. Set sur. csg. 360 ft.; W.O.C.

Plymouth Oil Co. No. 49-C Welder, 331 ft. N line, 1,107 ft. W line, sec. 49. M.I.M.

Sun Oil Co. No. 7 Hunt, 466 ft. S and E lines, Lot 5, sec. 34, Taft Farm Lands Subd. Drlg. 900 ft.

Sun Oil Co. No. 1 Jackson, 466 ft. N line, 315 ft. W line tr., E½ W½ sec. 35, J. Fessenden Sur. Loc.

Texon Roy. Co. No. 1 Rambo, 330 ft. W line, 466 ft. N line, Lot 6, sec. 35. T.D. 5,653 ft.; flowing 125 bbls. in 14 hrs. on 5/32-in. choke; completing.

Taft Field—San Patricio County

Esnes Oil Co. No. 3 Britton, 990 ft. N line, 330 ft. W line, 160-ac. tr., sec. 6, Blk. 7. Sd. 4,005-19 ft.; comp. 8 B.P.H. on 5/16-in. choke.

Humble O. & R. Co. No. 2 Mayo, 1,323 ft. S line, 1,152 ft. E line tr., Tabor Sur. Sd. 3,964-80 ft.; running tbg.

Margo—Starr County

H. L. Curry No. 1 Garcia, 30-ac. tr., Sh 7-B, Porc. 70, J. of Mier. T.D. 778 ft.; D.&A.

St. Marys O. & G. Co. No. 1 O'Shea, 450 ft. N line, 925 ft. W line, Sh. 65, Porc 71. T.D. 693 ft.; D.&A.

Rio Grande City—Starr County

Fech Oil Co. No. 1 Medardo Hinojosa, Sh. 36-A, Porc. 80, J. of Camargo. T.D. 1,504 ft.; W.O. orders; Rio Grande City sand 1,448-60 ft.; dry.

Samfordyce—Starr County

E. A. Graham No. 1 Santos Villareal, 26.48-ac. tr., Tr. 250, Porc. 38, Sd. 3,032-42 ft.; set csg. 3,110 ft.; to perforate 3,057-63 ft.

Phillips and Barnsdall No. 10 Yturria Land & Cattle Co., 110-ac. tr., E½ Porc. 100. Perf. 2,803.5-07 ft.; comp. 10 B.P.H. on ¼-in. choke.

Porter & Grimes No. 2 Garcia Land & Livestock Co., Lot 1, W½, Porc. 100. M.I.M.

Skelly Oil Co. No. 8 Seabury, Tr. 256, Porc. 38. Set sur. csg. 203 ft.; W.O.C.

Skelly Oil Co. No. 12 Seabury, Tr. 256, Porc. 38. Comp. 45 B.P.D on ¼-in. choke; sand 2,800-07 ft.

Sun Oil Co. No. 3 Chapatola, 660 ft. N. 330 ft. W No. 2, Porc. 99. Sd. 2,778-2,824 ft.; dry; cg. 2,830 ft.

Lopez—Webb County

C. H. Lewis No. 6 Lopez, sec. 110. Drlg. 1,421 ft.

Magnolia Pet. Co. No. 1 Peal, 1,669 ft. NE of NE cor. of Sur. 73, 330 ft. W line, Sur. 383. Drlg.

Mills Bennett Prod. Co. No. 4 Garcia, Sur. 112. T.D. 2,216 ft.; comp. 22 B.P.H.; sand 2,197-2,216 ft.

Mills Bennett Prod. Co. No. 7 Lopez, Sur. 112. Sand 2,213-35 ft.; set csg.; W.O.C.

Mortimer & Springer No. 8 M. Lopez, sec. 114 Sd. 2,136-62 ft.; drlg. plugs.

Superior Oil Co. No. 7 W. C. Billings, Sur. 109. Sand 2,228-31 ft.; testing.

Superior Oil Co. No. 8 W. C. Billings, Sur. 109. Sand 2,204-35 ft.; comp. 10,000,000 ft. gas.

Superior Oil Co. No. 7-A Billings, 990 ft. S line, 2,310 ft. E line, Sur. 113. Sd. 2,207-35 ft.; swabbing.

O'Hern—Webb County

Magnolia Pet. Co. No. 14 Seacord-Benavides, cen. Blk. 427. Set csg. 2,886 ft.; W.O.C.

Magnolia Pet. Co. No. 15 Seacord-Benavides, cen. Blk. 458, Hale Subd. Loc.

Magnolia Pet. Co. No. 16 Seacord-Benavides, cen. Blk. 495, Hale Subd. Loc.

Magnolia Pet. Co. No. 10-B Servando-Benavides, Blk. 426. T.D. 2,858 ft.; comp. 7½ B.P.H. on 5/16-in. choke.

J. J. O'Hern No. 1 S. Benavides, Blk. 460. T.D. 2,847 ft.; comp.; no gauge.

T. S. Reed No. 3 Brennan-Benavides, Blk 317. T.D. 2,928 ft.; comp. 10 B.P.H.

Texia Oil Corp. No. 2-D Benavides, Hale Subd., Arispe grant. Sd. 2,864-88 ft.; set csg.; testing.

Escobas—Zapata County

B W Roscoe No. 4 Bustamante Share 33. Sd. 1,380-88 ft.; S.D.; T.D. 1,388 ft.

Texas Co. No. 89 Whitehead, Cerrito Blanco grant. T.D. 1,780 ft.; running electrical survey.

R. A. Mitchell No. 1 Bustamente, Share 32, Comitas gr. Drlg. 256 ft.

S. R. C. Oil Co. No. 18-A Trevino, Sur. 66. Comp. 25 B.P.D.; T.D. 1,335 ft.

Haynes—Zapata County

Geo. Buck No. 1 Haynes, Blk. 4, Alice D. Haynes Subd. Drlg. 607 ft.

Upchurch & McKay No. 1 Haynes, Blk. 7, Haynes Subd. T.D. 987 ft.; comp.; no gauge.

WEST TEXAS WILDCATS

Andrews County

Grisham-Hunter Oil Corp. No. 1 Ratliff & Bedford, sec. 24, Blk. 73, P.S.L. Sur. Machine.

Brewster County

F. C. Dodson No. 1 Texas American Synd sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 1,959 ft.

Cochran County

Cascade and Honolulu Oil Corp. No. 1 E. B. Duggan, cen. Labour 13, League 55 Oldham County School Land. T.D. 232 ft.; waiting on rotary.

Concho County

W. C. Nelson et al No. 1 Rice, sec. 13, H.&T.C. Sur. Drlg. 1,750 ft.

Crane County

Clark et al No. 1 A. P. Jordan, sec. 12 Blk. B-22, P.S.L. Sur. Machine.

Gulf Oil Corp. No. 2 W. N. Waddell, sec. 18, Blk. B-21, S.D. 2,619 ft.

Gulf Oil Corp. No. 2 Tubbs, sec. 12, Blk. 27-B. Drlg. 2,110 ft.

Gulf Oil Corp. No. 2 McKnight, 1,320 ft. from N and E, sec. 9, Blk. B-21. Loc.

Humble O. & R. Co. No. 2 Tubbs, sec. 11 Blk. B-27. S.D. 4,375 ft.; drlg. plug.

Loffland Bros. No. 2 Tubbs, sec. 9, B-27. R.U. standard tools.

Moore Bros. No. 1 Barnsley, sec. 43, Blk. 32, P.S.L. Sur. Drlg. 4,421 ft.

Rider et al No. 1 Thaxton, sec. 2, W. L. Wilkenson Sur. Spudded and S.D.

Sinclair Prairie Oil Co. et al No. 1 Tubbs, sec. 3, Blk. B-27. Drlg. 4,426 ft.

Crockett County

John I. Moore No. 1 A. C. Hoover, sec. 4, Blk. FF, B.&B. Sur. Drlg. 1,131 ft.

Ector County

W. Dunning, Jr., No. 1 H. E. Cummins, sec. 33, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 4,266 ft.; S.I. for storage.

Grisham-Hunter Corp. No. 1 R. B. Cowden, C of SE¼, sec. 10, Blk. 45, Twp. 2n, T.&P. Sur. Cellar.

Edwards County

Paul Teas No. 1 J. B. Stewart, sec. 2 Blk. DA, G.C.&S.F. Sur. Fsg. 5,290 ft.

Fisher County

Forest Dev. Co. No. 1 A. M. Dry, sec. 108, Blk. 2, H.&T.C. Sur. Drlg. 3,178 ft.

Gaines County

Landreth Prod. Co. No. 1 Kirk, sec. 22, A-21. Drlg. 2,956 ft.

Garza County

Brown Eagle Oil Co. No. 1 Sullivan, Blk. 5, K. Aycock Sur. Spudder.

M. L. Richards No. 1 U. U. Post Est., 2,310 ft. from S and E, sec. 1,232, D. L. Phillips Sur. Loc.

Glasscock County

Bruce Frazier No. 1 E. Patterson, 330 ft. N and E, sec. 188, Blk. 29, W. & N.W. T.D. 190 ft.; R.U.R.

M. B. Stanton et al No. 1 W. P. Edwards, sec. 11, Blk. 34, Twp. 2s, T.&R. Sur. Drlg. 770 ft.

Howard County

Southern Oil Co. No. 1 W.P. Edwards, sec. 32, Blk. 30, Twp. 1s, T.&P. Sur. Drlg. 2,910 ft.

D. C. Reed et al No. 1 Walter Pike, sec. 24, Blk. 33, Twp. 1n, T.&P. Sur. Drlg. 1,954 ft.

Hudspeth County

Haymon Krupp Oil & Land Co. No. 1 Thaxton, sec. 34, Blk. 74, Twp. 6, T.&P. Sur. Drlg. 659 ft.

Jeff Davis County

C. M. Joiner No. 1 Jones & Coffield, sec. 8, Blk. 3, H.&T.C. Sur. Drlg. 3,875 ft.

Jones County

Gyr & Davis No. 1 Clyburn, E. H. Millard Sur., Sub. 27. Spudded.

I. D. Humphrey No. 1 J. M. Radford, 1,-sec. 19, Blk. 16, T.&P. Sur. Drlg. 2,367 ft.

Parker No. 1 C. L. Brown, sec. 5, Blk. 2, T.&N.O. Sur. T.D. 1,894 ft.; U.R. csg.

Menard County

Wilcox O. & G. Co. No. 1 Merchenson, sec. 158, E.L.R.R. Sur., Abst. 1,340, 8 miles S of Menard. S.D. 2,400 ft.

Pecos County

Dobbs Oil Co. No. 1 Rooney, sec. 12, Blk. 125, T.&St.L. Sur. Drlg. 1,580 ft.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 2,512 ft.

Trans-Pecos Oil Co. No. 1 F. W. Popham sec. 235, Blk. 11, G.H.&S.F. Sur. Drlg. 575 ft.

Presidio County

Linderman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R. Co. Sur., 2½ mil. NE of Presidio. T.D. 1,635 ft.

Reagan County

Bahan & Rhodes No. 1 M. Chase, sec. 40, Blk. 36, Twp. 5s, T.&P. Sur. Drlg. 3,105 ft.

Schleicher County

Cardinal Oil Co. et al No. 1 J. A. Whitten, sec. 35, Blk. LL, T.C.R.R. Sur. S.D. 4,222 ft.

Magnus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, Blk. V-28. Elev. 2,209 ft.; S.D. 4,350 ft.; gas sd. 4,956-5s ft.; drlg. 5,500 ft.

Terry County

J. A. Estes No. 1 F. B. Graham, 1,650 ft. from S and 990 ft. from W, sec. 23, Blk. T, O.&W.R.R. Loc.

Tom Green County

Spinner No. 1 Reed, Sub. 39, Mason & Perry Sur. S.D. 2,035 ft.

Ward County

Gulf Oil Corp. No. 1 W. A. Estes, sec. 38, Blk. 34, H.&T.C. Sur. Drlg. 1,327 ft.

P. Moran et al No. 1 Reynolds, sec. 12, Blk. 5, H.&T.C. R.U. machine.

Peck et al No. 2 Reynolds, sec. 12, Blk. 32, H.&T.C. Sur. S.D. 90 ft.

Superior Oil Co. No. 1 J. H. Hughes, sec. 67, Blk. 34, H.&T.C. Sur. S.D. 2,400 ft.

Winkler County

Bert Fields et al No. 1 Pure-Clapp, sec. 26, Blk. 26. T.D. 3,035 ft.; shot; tstg.

R. H. Henderson et al No. 1 J. B. Waston, sec. 10, Blk. 26. T.D. 3,045 ft.; swbg. and C.O.

Herbert Oil Co. No. 1 I. Hendrick, sec. 14, Blk. 26. C.O. 2,770 ft.

Humble O. & R. Co. No. 2-C Walton, sec. 34, Blk. 74, P.S.L. Sur. Drlg. 2,700 ft.

Magnolia Pet. Co. No. 1 State-Walton, sec. 7, Blk. B-3. T.D. 3,695 ft.; P.B. 3,171 ft.; tstg. on pump.

Fred Hyer No. 1 Evans, sec. 8, Blk. 56. S.D. 4,150 ft.

Joiner No. 1 Evans, sec. 46, Blk. 73, P.S.L. Sur. S.D. 3,335 ft.

Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. Loc.

Wahlenmaier and Atlantic Oil Prod. Co No. 1-A Walton, sec. 34, Blk. 74. T.D. 3,000 ft.; to shoot.

Yoakum County

Bahan et al No. 1 Henard, C SW ¼, sec. 367, Blk. D, J. H. Gibson Sur. S.D. 140 ft.

Stogner et al No. 1 Roosevelt, 2,220 ft from N and 330 ft. from E, sec. 215 Blk. D, John H. Gibson Sur. T.D. 140 ft. R.U. rotary.

TEX. PANHANDLE WILDCATS

Gray County

Bell O. & G. Co. No. 2 Furneaux, sec. 102, Blk. B-2, H.&G.N. Sur. Drk.

Joana Oil Corp. No. 1 Rendleman, sec. 146, Blk. B-2, H.&G.N. Sur. T.D. 2,810 ft.; pay 2,690-2,810 ft.; est. 35,000,000 ft. gas; shut in.

K. Kinsey No. 1 Stephens, sec. 187, Blk. sec. 546, Blk. H, B-2, H.&G.N. Sur. T.D. 2,475 feet. fishing tools.

Warner Oil Co. No. 1 Parker, 330 ft. from S and W lines of NW¼ of sec. 18, Blk. H. A. Wallace Sur. Drlg. 1,050 ft.

Hartley County

O. V. Beck et al No. 1-A Matador Ranch, sec. 20, Blk. 22, C.S.S. Sur. Pipe stuck 4,600 ft. and S.D.

Hutchinson County

Harry Stekall No. 1 Erle Thompson, sec. 5, Blk. M-18, D.P. Sur. Drlg. 1,145 ft.; testing.

L. L. Travis et al No. 1 Hodges, sec. 14. Blk. X-02, H.O.&B. Sur. T.D. 3,032 ft.;

Moore County

Moran Bros. No. 1 Lucky Tiger Oil Co., 330 ft. from S and E lines, SE¼ sec. 5, Blk. 1, P.D. Sur. Drlg. 2,450 ft.

Shamrock O. & G. Co. No. 1 Ryan-Jones sec. 190, Blk. 3-T, T.&N.O. Sur. T.D. 3,495 ft.; P.B. to 3,404 ft.; to comp. as gas well.

Wheeler County

Allender & Heare No. 1 Harvey, sec. 67, Blk. 13, H.&G.N. Sur. T.D. 2,187 ft.; fsg.

Ben G. Barnett No. 1 Stewart, sec. 73, Blk. 13, H.&G.N. Sur. S.D. 2,136 ft.

Johnston et al No. 1 Rabo, sec. 105, Blk. 23, H.&G.N. Sur. Spudded and S.D.

Phillips Pet. Co. No. 1 Porter, sec. 35, Blk. A-8, H.&G.N. Sur. Drlg. 3,445 ft.

E. C. TEXAS WILDCATS

Anderson County

Gulf Oil Corp No. 1 Ross, 1,770 ft. from SW and 1,370 ft. from NW of Robt. Irwin Sur. T.D. 5,476 ft.; elev. 487 ft.; washing.

Angelina County

G. E. Ginter No. 1 Martin Wagon Works E. Evans Sur., 2 mi. W of Homer. Spdd.

Bill La Rue No. 1 Cameron Lbr. Co., I. Ray Sur. Top sd. 1,340 ft.; S.D. 1,354 ft.

Ginter et al No. 1 Cope heirs, 1,325 ft. from northerly S line and from westerly E line of 1,374-ac. tr., Jose Moron Sur., 3 miles E of Dibol. S.D. 80 ft.

Bowie County

Westmount Oil Co. No. 1 R. N. Phillips, G. N. Hancock Sur., 10 mi. N of Oak Grove. R.U.

Cherokee County

Humble O. & R. Co. No. 1 S. D. Goodson, W. I. Reynolds Sur., 4 mi. SW of Jacksonville. Elev. 428 ft.; Austin 4,552-4,764 ft.; top Woodbine 4,822 ft.; drlg. 5,318 ft.

T. J. Wood et al No. 1 Huggins, 330 ft. out of NW cor. of W 88 acres of 208-ac. tr., L. Jordan Sur., 2 miles SW of discovery or 7 miles SW of Rusk. Loc.

Fannin County

Carter, Trustee, No. 1 Galloway, Georgetown lime 1,697-2,203 ft.; drlg. 2,250 ft.

Franklin County

Lucey Pet. Co. No. 2 A. W. Crawford, 150 ft. from S and W lines of 25-ac. lse., O. James Sur. R.U.

Grayson County

Olson Drlg. Co. No. 1 Southwestern Life Ins. Co., J. C. Jamison Sur., 6 miles NW of Denison. Elev. 767 ft. Top Viola 4,901 ft.; T.D. 5,890 ft.; P.B. to 5,300 ft.; W.O.C.

Henderson County

McDougal et al No. 1 E. Price, M. Mathews Sur., 4 mi. S of Trinidad. Rig.

Kaufman County

Lester & Duffield No. 1 D. C. Baron, 900 ft. from E and N lines, J. T. Taylor Sur., 8 miles NE of Elmo. M.I.M.

Scott & Woodside No. 1 Robinson, A. Cherino Sur., 2 mi. W of Scurry. Austin chalk 1,200 ft.; drlg. 1,575 ft.

Limestone County

E. H. Daugherty No. 1 S. Welch, A. Varella Sur., 4 mi. W of Groesbeck. T.D. 3,131 ft.; R.U. to deepen.

C. L. Lytle No. 1 J. L. Thompson, P. Varella Sur., Mexia field. T.D. 6,054 ft.; P.B. 5,880 ft.; flowed S.W. with gas.

Navarro County

E. A. Thomason No. 2 Estes Bros., Wm. Gilbert Sur., 1,000 ft. E of No. 1, 1 mi. E of Roane. Top Austin 1,504 ft.; drlg. 1,850 ft.

Red River County

Abercrombie-Harrison No. 1 Temple Lbr. Co., D. D. Bruton Sur., 10 mi. NE of Clarksville. Top Georgetown 665 ft.; drlg. 1,175 ft.

Williams et al No. 1 L. and O. Roberts, James Bankston Sur., 2 miles NE of Annona. Elev. 396 ft.; S.D. 725 ft.

Rusk County

D'Arman et al No. 1 R. E. Talliferro, 1,500 ft. from W and 1,320 ft. S of northerly NE cor. of T. L. Wilkshire, 6 miles W of Henderson. Drlg. 2,350 ft.

McCallum et al No. 1 E. C. Gary, John Piburn Sur., 5 miles S of Henderson. Elev. 338 ft.; S.D. 2,750 ft.

Pure Oil Co. No. 1 W. H. Faulkner, Wm. Elliott Sur., S of Concord. Elev. 563 ft.; drlg. 6,015 ft.

Titus County

Jule Alford No. 2 Fry, I. P. Stern Sur., 1,313 ft. N of No. 1. Drk.

Hollingsworth Drlg. Co. No. 1 A. O. Brown, cen. Lot 1, Blk. 41, Delgado Sur. R.U.

Magnolia No. 1 Carr, M. V. Delgado Sur. Elev. 371 ft.; drlg. 4,200 ft. in oil sand.

B C. Morrison No. 1 L. Sanders, C of Lot 1, Blk. 30, Talco townsite. Drk.

Niolx Oil Co. No. 1 J. N. Kelley, 150 ft. from N and E of 15.76-ac. tr., J. Holman Sur. Loc.

Ownby Drlg. Co. et al No. 1 F. Jones, C Lot 6, Blk. 16, M. V. Delgado Sur. Pecan Gap 1,620-1,785 ft.; elev. 361 ft.; drlg. 2,440 ft.

Saunders et al No. 1 Talco School Dist., I. P. Stern Sur. Austin 2,451-81 ft.; Georgetown 3,440 ft.

Tide Water Oil Co. No. 1 Carr, 990 ft. N

and 330 ft. W of 75-ac. lse., M. V. Delgado Sur. Elev. 358 ft.; R.U.

Van Zandt County

A. W. Walker et al No. 1 C. M. Whitaker, T. Buckley Sur., 2 mi. N of Grand Saline. Elev. 408 ft.; drlg. 2,836 ft.

EAST TEXAS

(Border Counties)

Cass County

American Liberty Oil Co. No. 1 Marcus Rembo, J. H. Reeves Sur. P.B. 6,072 ft.; to 6,010 ft.; cmtd. 7-in. csg. at 5,993 ft. comp.; 96 B.P.D.; ¼-in. tbg. ch.

American Liberty Oil Co. No. 4 Maxie, John Collum Sur. Drlg. 4,443 ft.

American Liberty Oil Co. No. 2 Maxie, John Collum Sur. Comp.; 20 B.P.H.; ½-in. tbg. ch.; T.D. 6,045 ft.

Marathon Oil Co. No. 1 R. P. Willis, S.F. I.W. Sur. No. 1,263. Drlg.

American Liberty Oil Co. No. 3 Maxie, John Collum Sur. T.D. 6,044 ft.; W.O.C.

McElvane et al No. 1 Beckett, John Collum Sur. Drlg. 5,844 ft.

R. W. Norton No. 1 W. M. Hall, 330 ft. S and 697 ft. W, NE cor. 100 acs., W. Robinson Sur. No. 907. Loc.

R. W. Norton No. 1 A. S. Hall, 334 ft. S and 2,091 ft. E, NW cor. 160 acs., James Young Sur. Loc.

R. W. Norton No. 2 Haywood, Priscilla Evans Sur. Drlg. 5,950 ft.

R. W. Norton No. 2 Mary Rives, John Collum Sur. Cg. 6,003 ft.

Showers & Moncrief Co. No. 1 Stallcup, J. Davenport Sur. Loc.

Superior Oil Co. No. 1 Stallcup, 330 ft. N of S line and middle E and W of 20 acs., Robert Trammel Sur. Loc.

Superior Oil Co. No. 2 Stallcup, 900 ft. from S line and middle E and W of 20 acs., Robert Trammel Sur. Loc.

Texas Co. No. 1 E. E. Hall, James Young Sur. Drlg. 5,733 ft.

United Gas Pub. Ser. Co. No. 1 Eva Fields, John Collum Sur. Drlg. 5,880 ft.

United Gas Pub. Ser. Co. No. 2 Eva Fields, John Collum Sur. Drlg. 5,827 ft.

United Gas Pub. Ser. Co. No. 1 L. J. Cunningham, W. Robinson Sur. R.U.

United No. 3 Fields, J. Collum Sur. Drlg. 5,593 ft.

United No. 1 Simpson, 660 ft. N of Texas Co. No. 1 Hall, J. Young Sur. Drlg. 4,722 ft.

United No. 1 J. J. Stewart, J. Collum Sur. Drlg. 5,864 ft.

Harrison County

R. C. Payne et al's No. 1 Lowery, H. D. Spain Sur. P.B. to 3,524 ft.

Marion County

Ed S. Holman's No. 1 Henderson, R. Berrington Sur. P.B. to 2,443 ft.

Panola County

George Hudson et al's No. 1 J. F. Nail, C. McGeary Sur. Set 8-in. 40 ft.; fshg. for core bbl. at 2,345 ft.

Geo. Le Grand No. 1 P. J. Wardleigh, A. Thompson Sur. Set 10-in. 62 ft.

N. C. TEXAS WILDCATS

Archer County

Continental Oil Co. No. 1 Claud Cowan, Blk. 6, J.C.S.L. Drlg. 860 ft.

Continental Oil Co. No. 1 J. J. Perkins, Lot 47, Blk. 5, C.&P. Sur. Drlg. 1,195 ft.

Deep Oil Dev. et al No. 1 Wilson, sec. 76, A.T.N.C. lands. W.O.C. 2,226-34 ft.; P.B. to S.O. wtr.

Luther Hedrick No. 1 Mrs. C. Threet, Blk. 91, J.C.S.L. Spdg.

Huggins Oil Co. No. 1 Perkins, Blk. 13, Denton Co. Sch. Lds. Drlg.

W. T. Hutcheson, Jr., No. 1 Wilson-C, Blk. 121, A.T.N.C.L. Drlg. 200 ft.

Kemp & Waggoner No. 1 Wilson, Blk. 75, A.T.N.C.L. Loc.

Perkins & Cullum No. 1 Young, sec. 27, Harris. Drlg. 2,145 ft.

Riner & Massee No. 1 Wilson, Blk. 118, A.T.N.C.L. Drlg. 1,750 ft.

Cooke County

Jas. L. Anderson No. 1 Bruhlmeyer, H. Strong A-930. Loc.

Anderson & Kerr No. 1 C. A. Stelzer, T. B. Stroud Sur. No. A-950. Drlg. 2,050 ft.

Anderson & Kerr No. 1 A. Wilson, Strong Sur. A-930. Drlg. 2,147 ft.

Cain & Chandler No. 1 J. B. Burch, J. McWilliams Sur. A-658. S.D. 1,065 ft.

Joe Grazier No. 1 E. P. Bell, F. J. Lindheimer Sur. A-571. Loc.

Hardin Oil Co. No. 1 J. G. Bonner, J. Lindheimer Sur. Drlg. 2,308 ft.

B. H. Hilburn No. 1 Hugan, A. Myers Sur. No. A-640. Drlg. 1,024 ft.

Keil & Keil No. 1 J. J. Perkins, B.B.B.&C. Sur. A-164. Tstg. S.S.O. 1,031-48 ft.

Lanier et al No. 1 Thetford, S.P.R.R. Sur. A-987. Drlg. 1,805 ft.

F. W. Merrick, Inc., No. 1 L. P. Bell, J. C. Martin Sur. A-699. Tstg. S.S.O. 2,312-17 ft.

N. Newburn No. 1 Dotson, Wm. Campbell Sur. A-238. Drlg. 1,710 ft.

Nixon Bros. No. 1 W. R. Harper, W. W. Pettit Sur. A-812. Material.

E. R. Robison No. 1 J. Krebs, H. Wilkey Sur. A-1,090. Drlg. 70 ft.

W. F. Russell No. 1 Belle Payne, Marshall University Sur. A-620. Drlg. 1,465 ft.

J. M. Russell et al No. 1 B. R. Bawcom, Blk. 24, John Barnett Sur. Drlg. 1,010 ft.

Seitz, Comegys & Seitz No. 1 Field & Bowers, L. Raney Sur. A-873. Spudded.

Sunray Oil Co. et al No. 1-A A. C. McCall, W. H. White Sur. A-1,134. S.D. 4,720 ft.

S. F. Thompson No. 1 F. Trubenback, P. Davidson Sur. A-337. S.D. 765 ft.

Whitehead et al No. 1 W. Reed, F. Earthman Sur. A-349. Drlg. 1,035 ft.

Woodbine Oil Co. No. 1 Potter & Potter, J. Gorham Sur. S.D. 997 ft.

Denton County

Oil Finance Corp. No. 1 J. S. Gambill, T. Burress Sur. S.D. 1,042 ft.

C. S. Hoad No. 1 Travelers Insurance Co., Wm. A. Thompson Sur. A-1,238. Drlg. 1,450 ft.

Manning & Moore No. 1 E. L. Darnell, I. Walters Sur. A-1,329. Drlg. 800 ft.

Foard County

Humble O. & R. Co. No. 1 Burnett, sec. 16, Blk. X, S.P.R.R. Sur. Fishing 3,210 ft.

Jack County

Bryson Oil & Gas Co. No. 1 G. E. Evett, Geo. Hardesty Sur. A-294. Drlg. 4,290 ft.

S. B. Edwards No. 1 Bryson, J. Hughes Sur. A-256. R.U.R.

Engineers Oil Co. No. 1 Cooke, J. Young Sur. Fsg. 2,380 ft.

W. H. Hammon No. 1 G. E. Evett, H. Plaster Sur. S.D. 750 ft.

W. H. Hammon et al No. 1 F. H. Rhodes, R. N. Erwin Sur. A-1,378. Drlg. 2,400 ft.

Harper Pet. Corp. No. 1 Van Hooser, J. W. Morrow Sur. A-1,926. Drlg. 1,995 ft.

C. Kadane No. 1 E. F. Smith, S.P.R.R. Sur. A-552. S.D. 1,295 ft.; repairs.

Panhandle Ref. Co. No. 1 Klinglesmith, M. Hamilton Sur. A-262. Sd. 3,040-50 ft.; C.O. after shot.

Sternteax Oil Co. No. 1 Boyd, J. N. Wright Sur. A-898. S.D. 3,340 ft.

Montague County

E. T. Hart No. 1 W. L. Davis, sec. 13, Jack Co. School Lds. Drlg.

Jim Seeds et al No. 1 Coomba, sec. 55, M.E.P.&P. Sur. Drlg. 1,801 ft.

J. M. Holmes No. 1 H. D. Field, sec. 55, M.E.P.&P. Sur. A-528. S.D.

A. H. Rosenburger No. 1 C. O. Meador, J. English Sur. A-214. Drlg. 1,156 ft.

Southwest Pet. Co. No. 1 W. S. Petty, S. A. Southerlin Sur. A-992. Spud. and S.D.

Wichita County

Pete Harmon et al No. 1 J. B. Jamison, J. Deck Sur. A-52. Drlg. 750 ft.

T. B. Medders No. 1 Fassett-B, sec. 2, C. T. A-769. Drlg. 500 ft.

J. M. Morton No. 1 Housler, J. C. Pike, A-509. Drlg.

Reno Oil Co. No. 1 W. T. Waggoner-D, sec. 1, S.&M. Sur. A-393. Fsg. 1,576 ft.

Wilbarger County

Franklin Oil Co. No. 1 D. G. Feller et al, sec. 108, Blk. 14, H.&T.C. Sur. S.D. 1,570 ft.

Lane & Simons No. 1 Allison, sec. 43, H. &T.C. Sur., Blk. 12. Drlg. 2,030 ft.

Pettit et al No. 1 Castleberry, sec. 67, H. &T.C., Blk. 14. Loc.

Smith No. 1 S. A. Dill et al, sec. 32, Blk. 14, H.&T.C. Sur. S.D. 2,090 ft.

L. Webb No. 1 J. L. McCrary, sec. 64, H.& T.C. Sur., Blk. 14. Drlg. 1,980 ft.

Wheeler & Brashear No. 1 Waggoner-B. Drlg. 200 ft.

Young County

Curtis & Bracken No. 1 Allar Co. "A" Garmes Sur. A-104. Fsg.; T.D. 4,400 ft.

Hinson Tidwell No. 1 Thompson. Drlg. 740 ft.

C. D. Neff et al No. 1 W. A. Dennis, C. F. Bass Sur. Drlg. 3,692 ft.

Pitzer West et al No. 1 W. R. Dollins, T.E. &L. Sur. 615. Drlg.

Pitzer & West No. 1 Harrell, J. Daily Sur. A-78. Drlg. 4,000 ft.

Rathke Oil Co. No. 2 J. T. Rogers, S. H. Graham Sur. A-124. Drlg. 4,551 ft.

Texas Co. No. 1 Stephens, T.E.&L. 1,985. Drlg. 2,370 ft.

Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hill, A-151. Drlg.

Canadian Fields

(Continued from Page 82)

tion, but deepening in the lime is expected to increase the flow.

Farther north, Sunshine Oils No. 1, LSD 10, section 19-1-21w4, has steel derrick on the ground and has leased rotary tools used for Terminal No. 1. Equipment will be moved as soon as the Terminal well is finished. Location was made by Joseph S. Irwin of Calgary, assisted by Dr. Robin Willis of Nordon Corp.

On the Comrey structure, southeastern Alberta, McDougall-McLeod Oil Co. No. 1, section 9-1-5w4, is in the Ellis formation around 3,300 feet and thought to be within about 100 feet of the Madison limestone, where production is anticipated.

Operations in Ontario

In Chatham Township, Kent County, Ontario, Union Gas Co. No. 3, SW Lot 6, Concession 14, got the granite at 3,715 feet and was abandoned after drilling 10 feet in. It encountered the Trenton limestone at 2,775 feet and got a very small show of gas in the lime at 3,230 feet. Union No. 4 will be started shortly.

In the Dawn field, Lambton County, Union Gas Co. No. 80 has been located in NW cor. SE Lot 25, Concession 11, Dawn Township.

In the Brownsville field, Oxford County, Archie Treleaven and associates No. 2, Lot 18, Concession 12, Dereham Township, finished in the sand below 900 feet with initial flow estimated at 2,368,000 feet a day. This is the largest gasser yet drilled in the Brownsville area. Aloka Oil & Gas Co. No. 3, Lot 23, Concession 12, is drilling close to the sand.

Bothwell Field

In the Bothwell shallow field, Kent County, Ontario, considerable activity has taken place in the last few months. As a result of cleaning out old producers, reviving abandoned wells and some new completions, the production of the field last year was increased to 34,714 bbls. and it is now pumping 100 bbls. a day or better.

The first Bothwell field was opened south of the town in 1864-65 when gusher wells and $14 oil brought a wild boom which collapsed when the American Civil War ended and prices dropped. About 1896 F. J. Carman opened the present field southwest of the town, when there was a second boom and some 200 or more wells were drilled. Production comes from the Onondaga formation at around 400 to 500 feet, and wells are operated by central pumping plants with jerker rods, as in the Petrolia field. Albert Marvin, Art and Bob Lather and Roy McGaffey have been actively drilling while old wells have been capped, cleaned out and restored to production.

New Wyoming Rules

The Wyoming Board of Land Commissioners has issued new rules and regulations governing the leasing of state land for mineral purposes. These have been submitted to those concerned and probably will be formally adopted and put into operation next month. Oil and gas leases come under the following regulations in the tentative rules:

Leases run for 10 years.

Fees to accompany applications include $10 for bond on new leases on which no discovery has been made and prospecting operations have not been carried on; filing fee, $1; for recording lease, $10; for filing notice of relinquishment, $1; for recording relinquishment, $10. These fees will be required upon filing application for or notice of relinquishment of lease and will be refunded if disallowed.

Rentals prior to discovery will be 25 cents per acre per year until discovery is made, amount after discovery to be determined by the board and applied on royalty.

Royalty will be 12½ per cent on lands where there is no production at the time lease is issued. On renewals or new leases on land where a commercial discovery has been made, the royalty will be fixed by the board, but will not be less than 5 per cent, with provisions for an increase or decrease at the end of five-year periods.

Leases may be relinquished upon 60 days' notice upon payment of recording fees.

Overriding royalties, to be valid, must have approval of board.

Leases primarily are to include 640 acres, more or less, and if more must be contiguous and not more than 1,280 acres. There is no limit on the number of leases which one may hold.

Rocky Mountain Runs

Estimated production of the Rocky Mountain fields for the week ending May 23 was as follows:

WYOMING	
Salt Creek	16,450
Big Muddy	1,540
Badger Basin	40
Byron	1,460
Dallas Derby	570
Dutton Creek	50
Elk Basin	340
Ferris	10
Frannie	1,800
Grass Creek	850
Greybull	10
Hamilton Dome	1,270
Hidden Dome	100
Hudson	260
LaBarge	1,090
Lance Creek	3,050
Lost Soldier	1,330
Midway	60
Oregon Basin	1,420
Osage	550
Pilot Butte	30
Quealy Dome	90
Rock River	1,850
Poison Spider	120
Warm Springs	170
Total Wyoming	34,510
MONTANA	
Buckley-Border	220
Cat Creek	750
Cut Bank	7,750
Dry Creek	2,090
Kevin-Sunburst	4,310
Lake Basin	50
Pondera	970
Total Montana	16,140
COLORADO	
Florence	140
Fort Collins and Wellington	340
Iles Dome	3,240
Moffatt	510
Orchard	70
Rangely	70
Tow Creek	190
Total Colorado	4,560
NEW MEXICO	
Artesia	650
Cooper area	8,150
Eunice area	17,960
Hobbs	26,340
Hogback	200
Jal	3,110
Lea area	1,000
Maljamar	1,930
Monument	6,480
Rattlesnake	680
Table Mesa	80
Total New Mexico	66,580
Total Rocky Mountain region	121,790

Canadian Imports

OTTAWA, Canada, May 23. — Imports into Canada of natural casinghead, compression or absorption gasoline in February amounted to 350,093 gallons valued at $19,995, all from the United States. January imports included 580,013 gallons at $36,083 from the United States and 2,500,877 gallons worth $177,003 from Peru.

Imports of gasoline lighter than .2835 specific gravity in February totaled 767,157 gallons valued at $64,411 against 1,041,100 gallons valued at $95,404 in January, all being from the United States.

Exports of gasoline and naphtha in February totaled 20,777 gallons valued at $2,963 against 10,993 gallons valued at $1,029 in January.

Canadian Gasoline Sales

OTTAWA, Canada, May 23. — While figures for a majority of the nine provinces are not available, returns of Canadian gasoline sales in February indicate a continued upward trend in most of the provinces reporting.

PERSONAL

GEORGE A. PETERKIN, vice president of the Williams Brothers Corporation, pipe line contractors, with headquarters in Tulsa, has been transferred to Houston as vice president of the Apex Construction Company, an associated company which has been one of the most active construction firms located on the Gulf Coast. Mr. Peterkin has been associated with the pipe line construction business for the past 10 years and his work has carried him through a half a dozen states.

WILLIAM MOELLER, JR., vice president of the Southern California Gas Company, has returned to Los Angeles from Dallas, Tex., where he made the opening address of the American Gas Association.

J. L. GREENFIELD is in charge of the Seismograph Service Corporation's district office at Midland, Tex.

J. EDGAR PEW, vice president in charge of production for the Sun Oil Company, Philadelphia, Pa., has been visiting the company's offices in Dallas, Tex.

J. R. GAHN, Houston, Tex., in charge of Tide Water Oil Company's southern district land department, was a business visitor in the Shreveport, La., office last week.

WALTER DAVID, superintendent of the Humber interests at Amarillo, Tex., has departed with his family to spend the summer in the Rocky Mountains, near Crede, Colo.

H. R. MILNER, K.C., of Edmonton, president, and E. W. BOWNESS of Calgary, vice president of the Canadian Western Natural Gas, Light, Heat & Power Company, visited High River, Alberta, recently to witness the spudding of Arca Development Company No. 1 well.

CHARLES W. TEATER, prominent independent oil operator in Michigan who opened the state's largest field in Porter Township, Midland County, has established new offices in Saginaw, Mich., since his recent return from a several months' trip to the Orient with MRS. TEATER.

R. E. FRANCE, R. J. WIGTON, J. W. MOSELY, TOM SNEDEKER, J. A. McGUIRE, N. L. FOSKETT, H. E. TEMPLETON, E. D. UNDERWOOD, R. C. EARLOUGHER, W. E. BOWMAN, R. E. KERR and P. A. GILL, students at Colorado School of Mines; BYRON B. BOATRIGHT, head of the engineering department, and C. F. BARB, an assistant, and R. W. MORTON, of the mechanical engineering department, attended the International Petroleum Exposition.

RALPH PRYOR, FLOYD LOCKHART and T. P. HENRICK, of Wichita, Kans., of Slick, Pryor & Lockhart, Inc., oil operators, were in Tulsa during the past week.

JOHN M. CRAWFORD and DAVID B. CRAWFORD of the Parkersburg Rig & Reel Company, are planning a trip to the place of their birth in Londonderry County, northern Ireland, this summer. It will be the first trip to the old home John M. Crawford has made since his arrival in America at the age of 15 years, but David B. has made it once or more.

JOHN A. THOMPSON and RALPH A. BRISTOL, Fort Worth, Tex., independent oil operators, were business visitors in Shreveport, La., last week with their attorney CHARLES L. MORGAN. The Texans were in Shreveport in the interest of launching two wells in Cass County, Texas, northwest of American Liberty Oil Company's recently completed Rodessa pool extension well.

R. OLSEN, president, Oklahoma City; L. E. WINKLER and E. C. KOCH of Wichita, Kans., and J. M. McCOLL of Toronto, Canada, officials of the Uscan Oil Company, which has production in West Texas, have been visiting their district offices at Midland, and the fields in that part of the state.

NELSON P. WIMBERLY, general manager of Murchison & Closuit, Inc., is in San Antonio, Tex., overseeing the establishment of head offices for that company. The office change from Dallas to San Antonio will bring T. F. MURCHISON and E. M. CLOSUIT, officers of the company, to the latter city. The firm owns and operates several pipe lines in Texas and New Mexico, including the recently completed Valley Pipe Line from the Samfordyce field in Hidalgo County to Port Isabel, near the mouth of the Rio Grande River.

GOV. ELMER HOLT, of Montana, appointed R. C. TARRANT, the largest individual producer in Montana, as chairman of the State Oil Conservation Board to succeed E. B. COOLIDGE. L. B. O'NEIL, president of the Santa Rita Oil & Gas Company, and O. M. WEBB, of the International Refining Company, were reappointed, and HOWARD ALGER, of Poplar, Mont., a business man not connected with the oil industry, was appointed a new member. No successor was named to W. E. RICE, of Great Falls, who is confined in a hospital.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The Scientific American says the idea of obtaining gasoline from natural gas is not new, and that a process quite similar to that now in use in natural gas plants in this country was described in the seventies by Coleman, a Scotch scientist, in his book, "Mechanical Refrigeration," Volume 2.

Charles H. Lavens, banker and oil producer, who began his oil country experience in Pit Hole, at the close of the Civil War, dies at his home in Bradford, Pa., aged 62 years.

20 YEARS AGO

The deepest drilling well in the United States, Peoples Natural Gas Company's test at McDonald, Pa., has reached a depth of 7,350 feet with no signs of oil or gas. The test has been drilling since 1911 and has thus far cost $50,000.

Daniel O'Day, Jr., dies of pneumonia at Rye, N. Y. James C. Tennent, noted oil scout of the seventies and eighties, dies at Caldeonia, N. Y.

A party of Sinclair land men under the direction of W. L. Connelly have been looking over Wyoming with a view to leasing. Oil men from every direction are exploring the Wyoming field.

Hill Oil & Gas Company gets a 10,000-barrel well in section 27-17-7, in the Shamrock end of the Cushing-Shamrock field in Oklahoma.

10 YEARS AGO

Sterling S. Huntley, geologist of the firm of Huntley & Huntley, Pittsburgh, Pa., was slain and robbed by Mexican thugs 40 miles south of Laredo, Tex. Mr. Huntley was doing geological work for Benedum & Trees. His murderers were arrested.

Magnolia Petroleum Company purchases all the holdings in the Luling area, of the United North & South Oil Company for $13,000,000, half cash and half in oil as produced in the field.

Forty refining companies own 78.8 per cent of the skimming capacity and 90 per cent of the cracking capacity in the United States.

FRED E. KENNEDY has joined the scouting department for Sinclair Prairie Oil Company and is now located at Houston, Tex.

E. H. ROUSE of Parkersburg, W. Va., representing the Edwin H. Fitler Company, was a Tulsa visitor in the past week. He was accompanied by MRS. ROUSE.

E. S. PORTER, general manager, and E. A. COOK, purchasing agent, both with the Amerada Petroleum Corporation at Tulsa, completed a trip to West Texas and New Mexico last week.

FRED HYER, independent operator of Fort Worth and Big Spring, Tex., flew his own plane to Tulsa last week. He has been flying his own ship, for business and pleasure, for several years.

M. E. WAGNER, vice president and general superintendent, and A. L. BURCH, of the production department, Marathon Oil Company, Tulsa, were in Cement, Okla., Monday when a Marathon well discovered a new deep producing horizon.

H. M. LINGLE, purchasing agent for Humble Pipe Line Company, Houston, has been designated as vice president of District 2 of the National Purchasing Agents Association, and will succeed H. D. PATRIDGE, of Indian Territory Illuminating Oil Company, Bartlesville, Okla., at the New Orleans convention this summer.

DR. S. T. YUSTER of the Mineral Industries Research Department of Pennsylvania State College, is in Bradford, Pa., in connection with securing information on Bradford oil field production problems. He was accompanied to Bradford by PROF. A. W. WALDO of the Department of Geology, Mineralogy and Geography of Pennsylvania State College.

PARAGRAPHS

E. L. DAVENPORT, former division superintendent for the Shell Petroleum Corporation, now producing independently, has just returned to Houston, Tex., from Washington, D. C., and other points East, where he has been on business. He was accompanied by MRS. DAVENPORT.

HUGH ELEY, of Altus, Okla., teaching assistant in the school of geology at the University of Oklahoma, will be presented the annual award of Sigma Gamma Epsilon, honorary geology fraternity. The award is presented each year to the most outstanding senior in the schools of geology, geological engineering and petroleum engineering.

F. T. GRAHAM, secretary, and WALTER E. BLODGETT, advertising department, of Standard Oil Company (Indiana), will be awarded gold pins symbolizing 30 years' service with the company this month. H. R. COCHRAN, St. Louis, Mo., division manager, and L. C. BALDWIN, printing buyer in the Chicago general offices purchasing department, have received diamond-set pins for 40 years' service. Mr. Graham began with Standard as stenographer May 16, 1906, Mr. Blodgett joined May 15, 1906, as office boy in the Milwaukee, Wis., division office. Mr. Cochran started as station clerk April 1, 1896, at Atchison, Kans., and Mr. Baldwin began as office boy February 10, 1896, in the purchasing department.

PHIL KAISER, BERNARD HART, S. A. GORING and C. H. CARLTON, of the producing department of the Texas Company, recently passed the 15-year mark as employes of the California division of the company.

JAKE SIMMONS, formerly with the J. E. Mabie organization, has joined the Olsen Drilling Company in the Oklahoma City field, and DON CANNETT, another former Mabie employe, has gone with Harry Blackstock organization.

BERNIE J. MATTOX, of the Marathon Oil Company, cashier's department, and MISS ANNA RENNIERS, of Tulsa, were married in the St. Francis Catholic Church of Tulsa, May 17, and left immediately on a honeymoon in the Ozarks.

JAMES CUNNINGHAM, president; C. E. STONER, vice president, and N. K. POTTER, secretary-treasurer of the Mount Diablo Oil, Mining & Development Company, California, were recently reelected to their respective offices at the annual meeting of the company.

M. L. ATKINSON, district superintendent for the Phillips Petroleum Company, was recently transferred from the Wichita, Kans., area to take charge of the company's operations in the Burbank field of Oklahoma. Mr. Atkinson has been in the employ of the Phillips company 14 years and in his transfer to the Burbank field he is returning to an area with which he is thoroughly familiar, having been located there earlier. He is a graduate engineer from the Missouri School of Mines.

M. M. KINLEY, oil well shooter, Houston, Tex., is reported as slowly recovering from his injuries sustained when a premature explosion at a fire in a well occurred and he had one leg broken and other injuries. The broken limb is in a cast and healing satisfactorily.

CLIFFORD HICKOK has resigned his position with the Derby Oil Company to go with Hanlon-Buchanan, Inc., in its executive department in Tulsa.

DR. T. A. LINK, of Calgary, Alberta, chief geologist of Imperial Oil, Ltd., visited Lethbridge recently in connection with seismograph survey work there.

AXTEL J. BYLES, president of the American Petroleum Institute, left Houston, Tex., last week for New York after attending the convention of the Texas Bankers Association.

GLEN HARROUN, production superintendent for the Texas division for Sinclair Prairie Oil Company with headquarters at Fort Worth, Tex., was a business visitor to the company's offices at Houston last week.

G. C. MILLER, for four years manager of the White Star Refining Company for the Windsor, Ontario, district, has been appointed general manager with headquarters at London, Ontario. T. M. HAWKINS, of Fredericton, New Brunswick, succeeds him as manager at Windsor.

JOHN MEHRING has been appointed treasurer of the Ethyl Gasoline Corporation, owned jointly by General Motors Corporation and the Standard Oil Company of New Jersey. Mr. Mehring, who succeeds the late ARTHUR E. MITTNACHT, has been connected with the Ethyl corporation since its organization in 1924.

J. S. C. FAIRBROTHER was elected president of the Colony Oil Company at its annual meeting in Lloydminster, Saskatchewan. Other officers elected were M. A. MILLER, vice president, and W. G. FOOTE, R. L. SHAW, JOHN KILCOYNE, W. J. HETHERINGTON, directors; and D. M. PHILPOTTS, secretary and treasurer.

Busy Michigan Man

John F. Martin, producer, refiner and searcher after new pools, is one of the busiest men in the growingly busy oil fields of Michigan. Upon graduating as a civil engineer from the University of Missouri he lost no time in acquiring a job. During the next nine years he was in the service of railroad construction contractors or of consulting engineering organizations, including Black & Veatch, of Kansas City, Mo. In 1929 Mr. Martin got into the oil and gas business as an engineer with Brokaw, Dixon, Garner & McKee, petroleum engineers and geologists of New York. Two years later he went to Michigan, where he started in the producing business for himself.

JOHN F. MARTIN

Mr. Martin soon became active in several different branches of the oil industry. He is president of John F. Martin, Inc., engaged in exploration and development, with offices in Alma. He was one of the founders of Mon-Mar Oil Corporation, of which he is president. He is secretary, treasurer and general manager of Leonard Refineries, Inc., which he organized. This company purchased the new Acme Refining Company's skimming plant, and present plans call for the addition of cracking and reforming units. Mr. Martin was also one of the founders of the J. W. Leonard, Jr., Trustee group, which brought in the Durbin discovery in the Crystal field.

Mr. Martin was born 34 years ago in Kansas City. He is married and has two children. Hunting is his favorite recreation, and he has several dogs and guns.

K. HUGHES and HERB MEYERS, Tyler, Tex., independent operators, were in Shreveport, La., on business last week.

W. D. CARLETON, production foreman for the Fohs Oil Company at Lake Charles, La., returned last week from Tulsa.

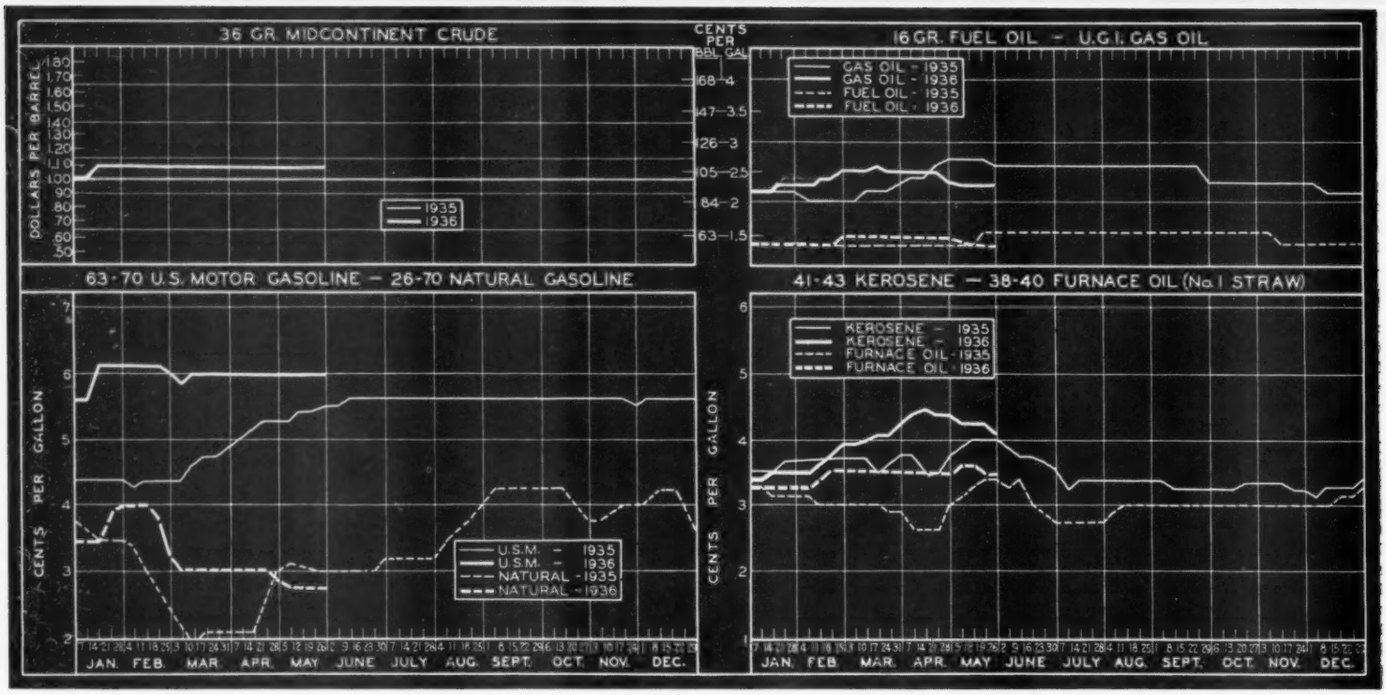
GEORGE STAVES, of the Kentucky Natural Gas Company, at Owensboro, Ky., and R. A. JUDY, with the Union Pipe & Supply Company, in Owensboro, spent the past week in Tulsa.

M. FRED PETERS, of the Canadian Pacific Railway staff at Lethbridge, Alberta, has been appointed to the office staff of the Tropical Oil Company at El Centro, Colombia, and will leave for Colombia about the middle of June.

R. R. THOMPSON, chief geologist for Danciger Oil Refineries, Inc., of Fort Worth, Tex., has returned to the Texas headquarters after spending five weeks at Rodessa supervising coring of pay, setting of casing and completion of the company's second and third producers in the field.

ARTHUR R. CAMPBELL, secretary of the Mid-Continent Oil and Gas Association, Louisiana-Arkansas division, has temporarily closed the Shreveport office of the organization and has established headquarters at 451-452, Hotel King, in Baton Rouge for duration of the Louisiana legislature's session.

F. M. (STEVE) NEELY has been put in charge of the work of reconditioning the plant of the Midland Gasoline Company at Conroe, Tex. He was formerly with the Cargray Corporation at Pampa and previous to that was assistant superintendent of all gasoline production for Amerada Petroleum Corporation.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
CENTS PER BBL GAL
1935
1936
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1935
GAS OIL - 1936
FUEL OIL - 1935
FUEL OIL - 1936
63-70 U.S. MOTOR GASOLINE - 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1935
U.S.M. - 1936
NATURAL - 1935
NATURAL - 1936
41-43 KEROSENE - 38-40 FURNACE OIL (No. 1 STRAW)
KEROSENE - 1935
KEROSENE - 1936
FURNACE OIL - 1935
FURNACE OIL - 1936
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Smart Upturn in Motor Fuel Demand Imparts Better Feeling in Group 3

By T. F. SMILEY

A smart upturn in gasoline demand over the week-end, along with the probability that rapidly heightening consumption is close at hand, served to impart a little better feeling in the Group 3 area this week; but nobody denied the motor fuel market was in an unwholesome condition and that fundamental correctives were needed.

Modest inroads on the immense gasoline inventories are reported, notwithstanding lack of restraint in runs to stills, and the trade got some comfort out of that. May is turning out to be a better month in point of consumption than many dared hope a few weeks ago. Movement on contract from refineries has been heavy in the last week, and although spot business has not assumed impressive proportions, it is at least improving. With the month closing with a double holiday as the result of Memorial Day falling on Saturday, a marked bulge in consumption is expected. Refiners said that many of the shipping instructions on contracts and the noticeable rise in spot orders in the last week or 10 days were by way of preparation for a lively Memorial Day demand.

Major Causes of Uneasiness

Three conditions stand out as major causes of nervousness in the gasoline market, according to observers. These are the unprecedented overproduction of crude, the failure of refiners to impose a reasonable curb on runs to stills and the unanswered question as to whether the 1936 touring season can absorb not only an output normally increased beyond that of 1935, but in addition the millions of barrels already piled up as a result of adverse motoring conditions earlier in the year.

Reduction of crude allowables in several states, while a move in the right direction, is not expected to have more than a mildly ameliorative effect in the refining end. Lack of wholehearted endeavor on the part of some refiners to keep their output in line with demand as estimated by the U. S. Bureau of Mines has contributed heavily to the market's present plight. Whether the excess stocks of gasoline now in hand can be taken care of by even the smashing motoring season which everybody expects is something over which the mathematicians and the forecasters have been busying themselves.

Of interest in this connection is the story told by the figures for 1934 and 1935 so far as they may be regarded as a guide in considering the 1936 prospect. According to American Petroleum Institute records runs to stills in the week ending May 19, 1934, totaled 2,430,000 bbls.; in the corresponding week of 1935, they totaled 2,380,000 bbls., and in the corresponding week of 1936 they were 2,740,000. Which is to say that the runs to stills this year exceed those of 1934 by 310,000 and those of 1935 by 360,000 bbls.

Refined Oil Market Barometer

Excellent motoring conditions are exerting a bracing influence on motor fuel, though topheavy inventories of both crude and gasoline are preventing the trade from reaping the full benefit of them. The excess stocks of gasoline are at last beginning to diminish and market sentiment generally is more cheerful. Naturals slightly firmer.

MID-CONTINENT. Gasoline steadier, with demand rising. Naturals firmer.

EAST COAST. Gasoline consumption sharply higher, but prices soft. Fuels easier.

GULF COAST. Market sluggish.

PENNSYLVANIA. General market lacks life.

CALIFORNIA. Market firm. Gasoline and naturals higher.

CHICAGO. Gasoline unsettled. Kerosene easier. Heavy fuels steady.

Gasoline Stocks Soar

Finished and unfinished stocks of gasoline in the week ending May 19, 1934, totaled 62,274,000 bbls. In the corresponding week of 1935 they totaled 59,825,000 and in the corresponding week of 1936 they were 67,622,000 bbls. Which is to say that the stocks in 1936 were 4,348,000 bbls. larger than they were in 1934 and 7,797,000 bbls. larger than they were in 1935. It takes an indomitable optimist to extract much cheer out of these figures.

The natural gasoline market was described as looking a little better. Available information indicates that the quantity of natural gasoline stored at plants is much greater than it was last year at this time. Also plant storage in April was far in excess of that in March. Nevertheless, the trade is manifesting no alarm over this situation. One reason for equanimity lies in the fact that substantial export and coastwise shipments from Gulf ports in the next few weeks are said to be in sight. This business, making important reductions in Gulf stocks, will make room for material now stored at inland plants, thus affording marked relief.

Surplus stocks of kerosene reported recently were said to have been cleaned up and the market was of better tone. Plowing activities were drawing heavily on tractor fuels. Lubricants showed little change and wax was lifeless.

Eastern Markets Showing Weakness

Because of Crude Oil Situation

NEW YORK, May 23. — With gasoline going into consumption at a record rate under ideal motoring conditions and the demand for fuel oils holding up well beyond expectations, nevertheless the eastern refined oil markets suffered a series of price cuts in the wholesale markets for its products, coming largely as a practical reminder of a threatening crude oil overproduction situation.

The refinery gasoline market, which had been holding firm up to a few days ago, suddenly weakened in sympathy with the softening trend exhibited in the Mid-Continent and Gulf Coast structure. Several marketers, which had been recently quoting a firm market at 7 cents per gallon for 60-64.9 octane material, readjusted their offering price to 6⅞ cents. It is reliably reported, however, that considerable gallonage is actually changing hands at 6¾ cents, a reduction of one-quarter cent from the figure at which business was being done a week ago. This latter figure probably represents the most accurate gauge of the market at the present time.

It would be difficult to regard this declining price trend as other than a sympathetic response to the unfavorable developments in the Southwest. As previously stated, motor fuel is moving into consumption at a record. At the same time, stocks in the hands of eastern marketers have been substantially reduced during the past two weeks, and it is certain, in view of the heavy demand, that neither refiners nor operators of bulk plants can be unduly worried with regard to the inventory situation.

Price Softening

The most likely explanation of the softening in the wholesale price structure seems to be that the trade here is anticipating continuing weakness in the Mid-Continent situation with the possibility that a protracted period of declining prices may be in store.

The tank-wagon and retail gasoline markets on the Atlantic Seaboard have maintained a firm undertone, in spite of the lowering of wholesale prices. The New York and Boston metropolitan areas are practically the only localities in which serious price-cutting has been reported this week. In New York, the widening of dealers' margins to 5-5½ cents on May 7 by some of the leading marketers served probably, to aggrevate the price situation, with indications that a general lowering of the tank-wagon and service station prices by as much as 2 cents per gallon, will be in prospect if conditions do not immediately improve. The principal hope is that any retail price cutting, if it does come, will be confined to the metropolitan district.

Also rather unexpectedly came a general lowering in fuel oil prices, with the extent of the cuts by the various refiners not exactly corresponding. Standard Oil Co. of New Jersey reduced No. 2 furnace oil one-quarter cent to 4¼ cents and No. 4 oil one-half cent to 3¾ cents, f.o.b. refinery, but did not change the price of No. 1 oil, which continues to be quoted at 4⅞ cents. The Socony-Vacuum Oil Co., on the other hand, put into effect a general reduction of one-quarter cent on all grades. The Standard Oil Co. of New Jersey also reduced the refinery price of its industrial fuel oil one-quarter cent to 3¾ cents per gallon, and of 28-30 diesel oil one-quarter cent to 4¼ cents to the domestic trade. It also cut 27 plus gas oil one-half cent to 4¼ cents per gallon.

Diesel oil for marine consumption and bunker fuel oil alone escaped the general downward price trend.

The market for lubricating oils, paraffin wax and petrolatums continues firm, although it is said crude scale wax still is showing a softer tone.

The Export Markets

Lack of sustained foreign buying, noted over the past few weeks, coupled with uneasiness over the domestic outlook, resulted in a general lowering of export gasoline prices during the past week, with 64-66 gravity 375 endpoint material being offered as low as 5⅜ cents per gallon, f.o.b. Gulf in cargo lots. This grade was nominally held last week at 5¾ cents. It is believed most business now being done is moving on the basis of 5½ cents per gallon.

In line with the reduction in 64-66 gasoline, other grades have been readjusted, with 61-63 quoted at 5¼-5⅜ cents, 60-62 at 5⅛-5¼ cents and U. S. Motor at 5@5⅛ cents.

On the other hand, the export market is not particularly active and it is evident that the lower prices have not attracted any great spurt in foreign buying. It is reported, however, that the Rumanian market, an important source of spot gasoline for European buyers, is firm. If it continues so, these buyers may find it advantageous to purchase a greater proportion of their requirements in the American market than they have been doing. Rumanian refiners have had a slight edge over Gulf exporters now for several months.

From a broad viewpoint, the export trade appears to be more worried over the international exchange outlook than with regard to the American oil situation, which they believe will straighten itself out within a reasonable period. It is entirely possible that foreign gasoline buyers have been greatly influenced by the existing uncertainties for a long time and have been waiting to see what direction the foreign exchange market was going to take. Weakness in the French franc has been the feature of the situation. This has subsided, but exchange experts are not yet convinced that devaluation of the france can be avoided.

The chief danger in connection with a possible devaluation, as previously pointed out, is its possible repercussion in other currencies, particularly with respect to the British pound sterling. Should the pound be affected, the dollar later might also become involved.

Inactive Market

Broad considerations such as these have more effect on the international movement of petroleum products than many suspect. This seems to be indicated by the dearth of activity in the American export markets, aside from the general movement of oil under contract, the volume of which usually is not much changed by exchange fluctuations. The balance of the international oil trade, while relatively a small part of the whole, often is of sufficient importance to affect the world oil price structure, for the same reason that a small overproduction at home may upset the crude oil price structure.

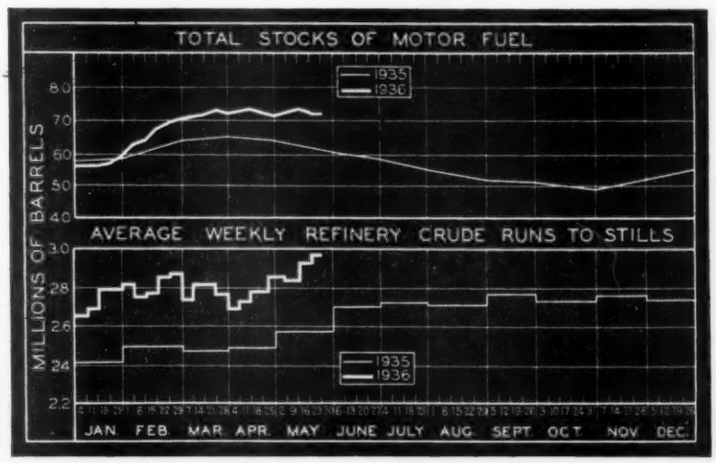
France is undoubtedly making strenuous efforts to stabilize its currency and is probably obtaining the help of both Great Britain and the United States.

A. P. I. Weekly Refinery Statistics

Week Ending May 23, 1936

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	495,000	20,228,000	8,179,000
Appalachian	94.8	105,000	2,701,000	484,000
Indiana, Illinois, Kentucky	95.9	414,000	10,852,000	3,406,000
Oklahoma, Kansas, Missouri	84.8	299,000	7,351,000	2,717,000
Inland Texas	48.5	107,000	1,553,000	1,756,000
Texas Gulf	96.8	627,000	8,153,000	6,976,000
Louisiana Gulf	96.4	129,000	1,491,000	1,975,000
North Louisiana and Arkansas	90.0	49,000	481,000	388,000
Rocky Mountains	61.9	44,000	1,532,000	733,000
California	92.6	528,000	13,280,000	71,327,000
Total reported	89.6	2,797,000	67,622,000	97,941,000
Estimated unreported	.....	178,000	4,868,000	2,271,000
*Estimated total	.....	2,975,000	72,490,000	100,212,000
*Estimated total previous week	.....	2,920,000	72,490,000	99,120,000
†May 31, 1935	.....	2,594,000	61,483,000	100,177,000

*Bureau of Mines basis currently estimated. †Monthly report, U. S. Bureau of Mines.



Oil Investment

The American Petroleum Institute estimates the total investment in the petroleum industry in the United States at $13,276,000,000 in 1935.

Production facilities accounted for 40 per cent. A total of $5,665,000,000 was invested in 333,070 producing oil wells, undeveloped acreage, inventories, etc., and 115,000 miles of pipe lines were valued at $941,000,000.

The 1935 investment in 638 refineries, equipment and oil inventories amounted to $3,400,000,000, while facilities valued at $3,000,000,000 were required to market the industry's products. The latter figure included an investment of $1,228,000,000 in 170,400 gasoline stations.

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 26, 1936

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Chicago	15.5	17.5	4.0	10.1
Decatur, Ill.	16.0	18.0	4.0	10.1
E. St. Louis	15.7	17.7	4.0	9.8
Joliet	14.5	17.5	4.0	10.1
Peoria	16.0	18.0	4.0	10.1
Quincy	15.8	17.8	4.0	9.9
Davenport, Ia.	16.0	(†)	4.0	10.1
Des Moines	15.8	(†)	4.0	9.9
Mason City	16.2	(†)	4.0	10.3
Sioux City	16.0	(†)	4.0	10.1
Duluth, Minn.	16.8	18.8	4.0	10.9
Mankato	16.4	18.4	4.0	10.5
Minneapolis	16.4	18.4	4.0	10.5
LaCrosse, Wis.	17.4	19.4	5.0	10.5
Green Bay	17.7	19.7	5.0	10.8
Milwaukee	16.3	18.3	5.0	10.4
Madison	17.4	19.4	5.0	10.5
Detroit, Mich.	14.0	16.0	4.0	8.8
Grand Rapids	16.4	18.4	4.0	9.3
Saginaw	16.6	18.6	4.0	10.1
Evansville, Ind.	17.7	19.7	5.0	10.6
Indianapolis	17.9	19.9	5.0	10.8
South Bend	18.1	20.1	5.0	11.0
Fargo, N. Dak.	17.4	19.4	4.0	11.5
Huron, S. Dak.	17.9	19.9	5.0	11.0
Sioux Falls	17.4	19.4	5.0	10.5
Kans. City, Mo.*	15.4	17.4	4.0	8.0
Springfield	15.1	17.1	4.0	9.2
St. Louis	15.7	17.7	4.0	9.8
St. Joseph*	15.4	17.4	4.0	9.5
Wichita, Kans.	14.9	16.9	4.0	7.1
Bartlesville, Ok.	15.0	19.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

†Standard Oil Co. (Indiana) has leased all service stations in Iowa.

Discounts to dealers except in Iowa: 3½ cents on premium and regular and 2½ cents on third grade off service station prices; discounts to dealers in metropolitan Chicago one-half cent larger than rest of Standard of Indiana territory, namely 4 cents and 3 cents on respective grades. Dealers in Iowa sold at posted "Dealer Prices."

Stanolex Fuel Oil in Chicago

Effective February 10, 1936, f.o.b. Chicago tank-wagon prices: Range oil, less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons and more, 7.25 cents. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons or more, 7.25 cents; No. 3. (22-26 zero), less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents; No. 4 (12-16 zero), less than 400 gallons, 7.5 cents; 400 gallons or more, 6.5 cents, viscosity of No. 4, 85° and 100° F.; No. 5, less than 400 gallons, 5.75 cents; 400 gallons or more, 4.75 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo.	18.0	20.0	5.0	11.0
Pueblo	18.0	20.0	5.0	13.0
Grand Junction	21.5	23.5	5.0	15.0
Casper, Wyo.	19.5	21.5	5.0	11.5
Cheyenne	19.5	21.5	5.0	13.0
Butte, Mont.	21.0	....	6.0	14.5
Billings	22.5	24.5	6.0	14.5
Helena	22.5	24.5	6.0	17.5
Great Falls	22.5	24.5	6.0	14.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.0	18.0
Boise	22.5	24.5	6.0	18.0
Albu'que, N. M.	18.5	20.5	*6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.5	22.5	7.0	*13.5
Augusta	20.0	22.0	7.0	*13.0
Macon	20.0	22.0	7.0	*14.5
Savannah	18.5	20.5	7.0	*13.0
Birm'ham, Ala.	20.5	22.0	8.0	12.0
Mobile	21.0	23.0	8.0	12.0
Montgomery	22.0	24.0	9.0	14.5
Jackson, Miss.	20.0	22.0	7.0	*13.0
Vicksburg	19.5	21.5	7.0	*13.0
Jacksonville, Fla.	18.0	20.0	8.0	12.0
Miami	19.5	21.5	8.0	13.5
Pensacola	21.5	23.5	9.0	12.0
Tampa	18.0	20.0	8.0	12.5
Lexington, Ky.	19.0	21.0	6.0	11.0
Covington	18.5	20.5	6.0	10.5
Louisville	18.5	20.0	6.0	10.0
Paducah	18.0	19.0	6.0	8.5

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile and Birmingham, Ala., each have a city gasoline tax of 1 cent per gallon. Pensacola, Fla., has a city gasoline tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	17.5	18.5	4.0	11.0
Phoenix, Ariz.	21.0	22.0	6.0	‡16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank-wagon lots except in Phoenix where discount is 1 cent.

‡Includes 5-cent state tax.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Atl'tic City, N.J.	14.3	17.8	4.0	9.0
Newark	14.3	17.8	4.0	7.5
Annapolis, Md.	15.6	19.1	5.0	10.0
Baltimore	15.0	18.5	5.0	8.0
Cumberland	16.6	20.1	5.0	12.7
Wash'g'n, D. C.	13.0	16.5	3.0	9.0
Danville, Va.	17.5	21.0	6.0	12.9
Norfolk	16.0	19.5	6.0	11.3
Petersburg	16.5	20.0	6.0	11.7
Richmond	16.5	20.0	6.0	11.7
Raonoke	17.5	21.0	6.0	12.9
Charles'n, W. Va.	15.8	19.3	5.0	12.6
Parkersburg	15.1	18.6	5.0	11.2
Wheeling	16.0	19.5	5.0	12.2
Charlotte, N. C.	18.4	21.9	7.0	12.6
Hickory	18.9	22.4	7.0	13.0
Mt. Airy	18.7	22.2	7.0	12.8
Raleigh	18.0	21.5	7.0	12.1
Salisbury	18.5	22.0	7.0	12.7
Charleston, S.C.	17.0	20.5	7.0	11.3
Columbia	18.3	21.8	7.0	12.6
Spartanburg	18.7	22.2	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Omaha	18.4	20.4	6.0	10.4
McCook	19.1	21.1	6.0	11.1
Norfolk	18.8	20.8	6.0	10.8
North Platte	19.2	21.2	6.0	11.2
Scottsbluff	19.9	21.9	6.0	11.9

Note—Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Philadelphia, Pa.	16.5	17.5	5.0	9.5
Pittsburgh	17.5	19.5	5.0	10.0
Allentown	17.0	18.0	5.0	9.5
Erie	17.5	18.5	5.0	8.0
Scranton	16.75	17.0	5.0	10.0
Altoona	17.5	19.5	5.0	9.5
Dover, Del.	17.0	17.0	5.0	10.0
Wilmington	16.5	16.5	5.0	9.5
Springf'ld, Mass.	14.0	17.5	4.0	7.5
Worcester	13.5	17.0	4.0	7.75
Hartford, Conn.	14.5	18.0	4.0	7.0
New Haven	13.0	16.5	4.0	7.5
Providence, R. I.	12.0	15.5	3.0	7.0

Note—Tank-wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
N. Orleans, La.	18.5	22.0	‡9.0	12.0
Baton Rouge	17.5	21.0	††7.0	11.5
Alexandria	18.5	22.0	†*8.0	11.0
Lafayette	19.0	22.5	‡*8.0	12.5
Lake Charles	19.0	22.5	†*8.0	11.0
Shreveport	17.0	20.5	††7.0	10.0
Knoxville, Tenn.	21.0	24.5	8.0	14.0
Memphis	19.0	22.5	8.0	11.0
Chattanooga	20.5	24.0	8.0	11.5
Nashville	20.0	23.5	8.0	10.0
Bristol	18.75	21.5	8.0	14.5

*Includes city tax of 1 cent.

†Includes 1-cent parish tax. ‡Includes 3-cent parish tax.

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Post deal	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Albany, N. Y.	14.0	17.5	5.0	7.75
*Met. N. Y.:				
Manhtn., Bronx	14.2	19.2	5.0	7.25
Staten Island	14.2	19.2	5.0	7.25
Qu'ns & Br'klyn	14.2	19.2	5.0	7.25
Buffalo	14.5	18.0	5.0	8.25
Rochester	14.5	18.0	5.0	8.25
Syracuse	14.5	18.0	5.0	8.75
Boston, Mass.	12.5	16.0	4.0	7.5
Portland, Me.	14.5	18.0	5.0	7.75
Manch'ter, N. H.	15.0	18.5	5.0	8.0
Burlington, Vt.	17.0	20.5	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Dallas, Tex.	13.5	17.0	5.0	8.5
Fort Worth	13.5	17.0	5.0	8.5
Houston	14.0	18.0	5.0	8.5
San Antonio	14.0	18.0	5.0	8.5
El Paso	15.0	19.0	5.0	8.0
Muskogee, Ok.	15.0	19.0	5.0	8.0
Okla. City	15.0	19.0	5.0	8.0
Tulsa	15.0	19.0	5.0	8.0
Ft. Smith, Ark.	15.5	19.0	5.0	8.0
Little Rock	18.0	21.5	7.5	9.5
Texarkana	14.5	18.5	5.0	8.5

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Hamilton, Ont.	21.0	23.5	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	30.8	33.8	7.0	22.3
Winnipeg, Man.	29.2	32.2	7.0	20.7
Regina, Sask.	30.5	33.5	7.0	22.0
Saskatoon, Sask.	33.3	36.3	7.0	24.8
Edmonton, Alta.	32.7	35.7	7.0	24.2
Calgary, Alta.	30.0	33.0	7.0	21.5
Vancouver, B. C.	26.0	29.0	7.0	24.0
Montreal, Que.	19.5	22.0	6.0	17.5
St. John, N. B.	25.0	29.0	8.0	19.5
Halifax, N. S.	25.0	29.0	8.0	19.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal where discounts below station price are one-half cent per gallon less.

Retail Price Changes

Standard Oil Co. (Indiana) May 22 advanced tank-wagon and station gasoline .5 cent in Joliet.

Standard Oil Co. of Kentucky May 7 reduced tank-wagon gasoline .5 cent and station gasoline 1 cent in Birmingham.

Standard Oil Co. of New Jersey May 18 reduced tank-wagon and station gasoline and tank-wagon kerosene .3 cent in Charlotte and Salisbury; May 18 reduced gasoline and kerosene prices .1 cent in Hickory; May 18 reduced tank-wagon and station gasoline .3 cent and tank-wagon kerosene .4 cent in Mount Airy; May 18 reduced tank-wagon and station gasoline .4 cent and tank-wagon kerosene .6 cent in Raleigh.

Magnolia Petroleum Co. May 19 advanced tank-wagon gasoline .5 cent and station gasoline 1 cent in Houston.

Montana Refineries

A summary of refinery operations in Montana made by the Montana Oil Conservation Board as of May 1 shows 17 refineries with a charging capacity of 21,082 bbls. and a cracking capacity of 6,100 bbls. daily as having operated throughout the last 12 months. Six refineries with a charging capacity of 1,493 bbls. and a cracking capacity of 200 bbls., operated irregularly during the year and nine refineries with a capacity of 4,315 bbls. daily are shut down for an indefinite period with resumption of operations uncertain. Of the 17 operating steadily four used Montana and Wyoming crude and 12 ran on Montana crude only. One refinery operated exclusively on oil from Wyoming.

A. D. Stoddard, Halliburton Oil Well Cementing Co., and T. E. Ward, Oilfield Equipment Co., New York, who attended the International Petroleum Exposition in Tulsa last week, flew to North Louisiana on Thursday and visited the Rodessa field.

Walter S. Reid, manager of the International Petroleum Co., Ltd., at Lima, Peru., is visiting the United States and Canada on vacation, accompanied by his wife and son.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 26, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—
U. S. Motor grades:
62 octane and below (3d. gr.) .04⅞ .05⅛
63-67 octane .05½ .05⅝
68-70 octane (regular) .06 .06⅛
60-62 400 grades:
62 octane and below .04⅞ .05⅛
63-67 octane .05½ .05⅝
68-70 octane (regular) .06 .06⅛
64-66 375 .05 .05⅛
68-70 360 .05⅛ .05⅜

NORTH TEXAS—
U. S. Motor grades:
62 octane and below .04⅞ .05⅛
63-67 octane .05½ .05⅝
68-70 octane (regular) .06 .06⅛
60-62 400 .05 .05⅛
64-66 375 .05⅛ .05⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—
U. S. Motor grades:
62 octane and below .05⅜
63-67 octane .06⅛
68-70 octane (regular) .06⅜
60-62 400 .05⅜ .06

ARKANSAS (Ark., N. La., Miss. del.)—
U. S. Motor grades:
62 octane and below .05⅜
63-67 octane .06⅛
68-70 octane (regular) .06⅜

CHICAGO (Based on Group 3)—
U. S. Motor grades:
62 octane and below .04⅞ .05⅛
63-67 octane .05½ .05⅝
68-70 octane (regular) .06 .06⅛
60-62 400 grades:
62 octane and below .04⅞ .05⅛
63-67 octane .05½ .05⅝
68-70 octane (regular) .06 .06⅛
64-66 375 .05 .05⅛
68-70 360 .05⅛ .05⅜

PENNSYLVANIA (inland refineries)—
58-60 U. S. Motor:
Below 60 octane .05⅛
60-64.9 octane .06¾
65-70 octane .07
64-66 375 .05¾
68-70 350 .06

CALIFORNIA (domestic movement)—
54-58 U. S. Motor .06½ .07½
58-60 400 .07½ .08

EAST COAST—(domestic)—
U. S. Motor, below 60 octane:
*New York (Bayonne) .06½
Baltimore .06½
U. S. Motor, 60-64.9 octane:
*New York (Bayonne) .06¾
Philadelphia .06⅜
Boston .06⅜
Baltimore .06½
Charleston, S. C. .06½
U. S. Motor, 65 and above:
*New York (Bayonne) .07
Philadelphia .07
Boston .07
Baltimore .06⅝
Charleston, S. C. .06¾

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—
U. S. Motor grades:
Below 60 octane .05⅝ .05¾
60-64.9 octane .06
65 octane and higher .06⅛ .06¼

Naphtha

PENNSYLVANIA (inland refineries)—
50-52 450 (blending) .05½
52-54 450 (blending) .05½
54-56 450 (blending) .05⅝

Natural Gasoline

OKLAHOMA (Group 3)—
Grade 26-70 .02¾ .03
Grade 18-55 .03¼ .03½
Low vapor pressure grade:
*14 lb. v.p. (max.) .03¾ .04¼
*12 lb. v.p. (max.) .04¾ .05

*Nominal.

NORTH TEXAS—
Grade 26-70 .02½
Grade 18-55 .03 .03¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—
Grade 26-70 .03⅛ .03¼

CALIFORNIA—
75-85 375-390 .06½ .07½

Tractor Fuel

OKLAHOMA (Group 3)—
40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p. .04¼ .04⅝
41-43 gr., 300-350 i.b.p., 110-125, flash, 500-520 e.p. .04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p. .05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—
41-43 .04⅛ .04⅝
42-44 .04⅝ .04⅝

NORTH TEXAS—
41-43 .04⅛ .04⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—
41-43 .04⅛ .04⅝

ARKANSAS (Ark., N. La., Miss. del.)—
41-43 .04⅝ .04⅝

PENNSYLVANIA (inland refineries)—
45 .05½
46 .05⅝
47 .05¾

CHICAGO (Based on Group 3)—
41-43 .04⅛ .04⅜
42-44 .04⅝ .04⅝

CALIFORNIA (Pac. Coast market)—
38-40 high burning test .03½ .05

NEW YORK (Bayonne, N. J.)—
*41-43 .04⅞

GULF COAST (domestic)—
41-43 03¾

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—
No. 1 prime white, 38-42 .03¾ .04
No. 1 straw, 38-40 .03½ .03¾
No. 2 straw, 32-36 .03¼ .03¼
No. 2 dark, 32-36 .03 .03⅛
No. 3, 28-32 .02⅞ .03
No. 3, 15 and above, 28-32 .02⅝ .02½

NORTH TEXAS—
No. 1 prime white, 38-42 .03⅝ .03⅞
No. 1 straw, 38-40 .03⅜ .03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—
No. 2, 32-36 .02⅞ .03

ARKANSAS (Ark., N. La., Miss. del.)—
No. 2, 32-36 .03½ .03⅝
No. 3, 28-32 .03⅛ .03¼

CHICAGO (Based on Group 3)—
No. 1 prime white, 38-42 .03¾ .04
No. 1 straw, 38-40 .03½ .03¾
No 2 straw, 32-36 .03⅛ .03¼
No. 2 dark, 32-36 .03 .03¼
No. 3, zero to 15, 28-32 .02⅞ .03
No. 3, 15 and above, 28-32 .02⅜ .02½

NEW YORK (Bayonne, N. J.)—
*No. 1 .04⅞
*No. 2 .04¼
*No. 4 .03¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—
U.G.I. gas oil .02⅜ .02½
No. 4, 24-28 .95 1.00
No. 4, 15 and above, 24-28 .77½ .82½
No. 5 .72½ .75
No. 6 .62½ .67½
Below 18 fuel oil, industrial .60 .65

NORTH TEXAS—
U.G.I. gas oil .02⅜ .02½
No. 4, 24-28 .92½ .97½
No. 5 .72½ .75
No. 6 .62½ .67½
Below 18 fuel oil, industrial .60 .65

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—
U.G.I. gas oil .02⅜ .03
10-14 fuel oil, industrial .70 .75

ARKANSAS (Ark. N. La., Miss. delivery)—
10-14 fuel oil, industrial .60 .65

CHICAGO (Based on Group 3)—
U.G.I. gas oil .02⅜ .02½
No. 4, 24-28 .95 1.00
No. 4, 15 and above, 24-28 .77½ 82½
No. 5, 18-22 .72½ .75
No. 6, 10-16 .62½ .67½

PENNSYLVANIA (inland refineries)—
36-40 .04¾ .04⅞

CALIFORNIA—
Los Angeles:
30-34 gas oil, per bbl. 1.00 1.20
24 plus diesel 1.00 1.25
24 plus diesel (bunkers) 1.10 1.30
12-16 (bunkers at tidewater) .85 .95
10-16 (cargo lots) .80 .95
12-17 (tankcars) .70 .95
San Joaquin Valley:
10-18 (tankcars) .65 .75
San Francisco:
24 plus diesel, per bbl. 1.30 1.35
24 plus diesel (bunkers) 1.35
10-16 (bunkers) 1.00

GULF COAST—
28-30 gas oil .03¼ .03⅜
28-30 diesel (bunkers) 1.50
Bunkers (bulk cargoes) .80
Bunker C (bunkers) .90

NEW YORK (Bayonne, N. J.)—
27 plus, gas oil .04¼
28-30 diesel (lighterage 6¼ plus per bbl.) 1.65
28-30 diesel (tankers) .04¼
*Bunker C (to ocean-going ships in N. Y. harbor) 1.05
Industrial fuel (tankcars) .03¾

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—
Bright Stocks:
190-200 D, 15-25 .21½
150-160 D, 0-10 .18½
150-160 D, 15-25 .18
150-160 E, 15-25 .17½
100-110 D, 0-10 .17
Steam refined:
631 green (treated) .13½
600 dark green (untreated) .06 .07½

PENNSYLVANIA—
Bright Stocks (Pennsylvania grade No. 8 color, 145-50 at 510; 540-550 flash):
10 pour test .24½ .25
15 pour test .23½ .24
20 pour test .22½ .23
25 pour test .21½ .22
Steam refined:
600 .13½ .14
650 .14½ .15
600 Pennsylvania flash .15½ .16
630 flash .17½ .18
600 Warren E filtered .15½ .16

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—
Zero to 10 Cold Test:
150-3 .10
180-3 .11½
180-4 .10¾
200-3 .11¾
200-4 .11¼
250-3 .13¾
250-4 .13½
280-3 .14¾
280-4 .14½
300-3½ .15½
400-3½ .16
100-2 paraffin oil .05¾
15-20 Cold Test:
200-3 .10¾
200-4 .10½
240-3 .12¾
240-4 .12½
280-3 .13¾
280-4 .13½

GULF COAST—
Pale Oils:
200-3 .07 .07½
300-3 .07½ .08
500-3½ .08½ .09
750-3½ .09 .09½
1,200-3½ .09½ .09¾
2,000-4 .09¾ .10
Red Oils:
200-5-6 .07 .07½
300-5-6 .07¼ .07½
500-5-6 .08 .08½
750 .08½ .09
1,200-5-6 .09 .09½

CALIFORNIA (moving to dom. market)
Pale Oils:
100-2½-3 .06
200-2½-3 .06¼
300-3-3½ .06½
400-3-4 .08½ .09½
450-3-4 .09¾ .10
550-3-4 .10 .10½
600-3-4 .10¼ .10½
Red Oils:
200-4-5 .06
300-5-6 .06¼
350-5-6 .07 .08
400-5-6 .08 .08¼
450-5-6 .08¼ .08½
500-5-6 .08½ .09
600-5-6½ .09 .09½
700-6½ plus .09¾ .10
750-6½ plus .10 .10¼
900-6½ plus .10¼ .10½

PENNSYLVANIA—
150 vis. at 750° F., color, 400-405 flash:
Zero pour test .19 .19½
10 pour test .18 .18½
15 pour test .17½ .18
25 pour test .16½ .17
180 vis. at 70° F., 3 color:
25 pour test .19½ .20
200 vis. at 70° F., 3 color:
Zero pour test .23 .23½
10 pour test .22 .22½
15 pour test .21½ .22
25 pour test .20½ .21

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—
124-126 (a.m.p.) w.c. scale .02½ .02⅝

PENNSYLVANIA—(inland refineries)—
122-124 (a.m.p.) w.c. scale .0255 .0260
124-126 (a.m.p.) w.c. scale .0260 .0265

NEW YORK—
Wax in bags fully refined:
123-125 (a.m.p.) wax .0445
125-127 (a.m.p.) wax .0455
128-130 (a.m.p.) wax .0480
130-132 (a.m.p.) wax .0505
133-135 (a.m.p.) wax .0535
135-137 (a.m.p.) wax .0560
124-126 (a.m.p.) w.s. .0240 .0250
124-126 (a.m.p.) y.s. .0240 .0245
Petrolatum in barrels, carload lots:
Dark green .01⅞
Amber .02⅞ .03
Extra amber .03 .03⅛
Lily white .06⅝ .06¾
Snow white .07¾ .07⅞
Cream .05⅝ .05¾

Export Prices

GASOLINE

GULF COAST—
U. S. Motor .05 .05⅛
60-62 400 .05⅛ .05¼
61-63 390 .05¼ .05⅜
64-66 375 .05⅝ .05½

LOS ANGELES—
U. S. Motor grades:
53-55 octane .04½
55-56 octane .04½ .04¾
65-67 octane .04¾ .05
67-69 octane .05 .05¼
Above 69 octane .05¼ .05½
65 and above 400 e.p. .05½ .06

KEROSENE

GULF COAST—
41-43 prime white .03⅞
41-43 water white .04
44 water white .04¼

LOS ANGELES—
41-43 water white .04¾ .05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—
Cylinder Stocks:
600 Warren E .21 .21½
600 S.R. unfiltered .19 .19½
650 S.R. unfiltered .19½ .20
600 flash S.R. .20½ .21
630 flash S.R. .23½ .24
Bright Stocks:
8 color .26½
6½ plus color in dilution .26

NEUTRAL OIL

200-3 color .26½ .27
150-3 color .22½ .23

PARAFFIN WAX

NEW YORK (prices per pound)—
123-125 a.m.p. .04125
125-127 a.m.p. .0425
128-130 a.m.p. .0450
133-135 a.m.p. .0525
135-137 a.m.p. .0550
Crude scale:
124-126 w.s. .0260 .0270
124-126 y.s. .0240 .0245

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Altus and Tipton, Okla.‡	1.08
Other fields (see gravity table).	

*All companies. †Pure Oil Co. ‡Gypsy Oil Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell Counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.28
Torchlight, Wyo.*	1.28
Grass Creek, Wyo., light*†	1.28
Grass Creek, Wyo., heavy*†	.72
Hamilton Dome, Wyo.*	.67
Elk Basin, Wyo., light *†	1.28
Frannie, Wyo., heavy*	.72
Frannie, Wyo., light (Feb. 24, 1936)*	.78
Hogback, N. Mex.*	1.21
Pondera, Mont.* (Jan. 29, 1936)	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Rock Creek, Wyo.†	1.12
Artesia, N. Mex. (Dec. 1, 1933)‡	.75
Maljamar, N. Mex. (Sept. 29, 1933)‡	.75
Fort Collins and Wellington, Colo.‡ (Jan. 9, 1936)	See Note
Florence, Colo.	.95
Lance Creek, Wyo.	.85
Lost Soldier, Wyo. (Sept. 30, 1933)	.85
Hudson, Wyo. (June 2, 1931)	.65
Sunburst, Mont.	1.25
Cat Creek, Mont.	1.28
Cut Bank, Mont. (May 23, 1934)	1.45

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Southwest Texas

(January 9, 1936)

Saxet	$ .90
Mirando	.85
Pettus	1.25
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	.90
Lytton Springs	1.00
Duval County	.85

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duvall by Texas Co.

Middle Western States

OHIO OIL CO.

Lima (Jan. 10, 1936)	$1.25
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)	1.23
Midland, Mich. (Jan. 13, 1936)*	1.32
West Branch, Mich. (Jan. 14, 1936)	1.16
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.38
Western Kentucky (Jan. 9, 1936)	1.23

*Posted by Pure Oil Co. and Simrall Corp. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1.10
Hardin, Tex.	1.03
Greta, Tex.	.90
Refugio, Tex., heavy	.90
Tomball, Tex.	1.30
LaFitte, La.	1.12
Livingston, Tex.	1.15
Bosco, La. (Jan. 16, 1936)	1.05
Evangeline, La.	1.07
Welsh, La.	.96

Cleveland and Hardin by Magnolia; Greta by Texas Co.; Refugio by Humble; Tomball by Humble and Magnolia; LaFitte by Texas Co.; Bosco by Pure; Evangeline and Welsh by Stanolind Oil & Gas Co.; Livingston by Shell Petroleum Corp.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$.75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East Field (Jan. 16, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	.80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana. El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita Counties, Arkansas.

Eastern States

TIDE WATER PIPE CO.

(Effective Jan. 13, 1936)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.17
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.12
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.42

PENNZOIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.42
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.41
Includes Titusville district.	
Group C	2.40
Includes Turkey and Tidioute districts.	
Group D	2.39
Includes Bear Creek and Porkey districts.	
Group E	2.36
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.

(Effective Jan. 13, 1936)

Cabin Creek, W. Va.	$2.12
Bradford Hollow, W. Va.	2.12
Kelly Creek, W. Va.	2.12

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Feb. 3, 1936):†	
Clear naphtha	2.70
Discolored naphtha	2.46
Crude oil, 50 gravity	2.32
Crude oil, 45 to 49.9	2.12
Crude oil, 40 to 44.9	1.55

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$ .74

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

Harry Stoudemier, of the Oil Well Supply Company, Fairfax, Okla., visited his mother and other relatives in San Antonio, Tex., last week, and stopped in Tulsa for a brief visit on his way back to Fairfax.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas, and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Anahuac and Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$.92	....	$.82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$.86	....	....	$.78	....	....	....	....	....	....	....
25-25.9	.88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1.08	....	.98
28-28.9	.94	....	....	.86	....	....	....	....	1.10	....	1.00
Below 29	.94	$.84	$.91	....	....	....	....	$.75	....	....	....
29-29.9	.96	.86	.93	.88	....	....	....	.76	1.12	....	1.02
30-30.9	.98	.88	.95	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1.00	.90	.97	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.99	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1.20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1.22	1.12	1.12
Below 35	....	....	....	....	$.86	$.81	....	....	....	....	....
35-35.9	1.08	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1.14	1.14
36-36.9	1.10	1.00	1.07	1.02	.90	.85	1.26	.90	1.22	1.16	1.12
37-37.9	1.12	1.02	1.09	1.04	.92	.87	1.28	.90	1.22	1.18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1.16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1.22	1.12
40 and over	1.18	1.08	1.15	1.10	.98	.93	1.34	.90	1.22	1.24	1.12

Magnolia Petroleum Co. in the East Central Texas field pays 7 cents per barrel less than above posted prices in that field.

STANDARD OIL CO. OF CALIFORNIA

Crude oil prices at the well effective March 7, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset except Lakeview Area	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.65	$.70	$.65	$.70	$.70	....	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.66	.74	.66	.74	.71	$.70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.68	.78	.68	.78	.72	.70	....
21-21.9	.85	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$.78	.73	.71	.82	.71	.82	.74	.70	....
22-22.9	.92	.82	.76	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.74	.87	.74	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	....	.96	.88	.93	.82	.92	.78	.80	.77	.92	.77	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.80	.97	.80	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	.83	1.01	.83	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	.86	1.06	.86	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	.88	1.10	.88	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	.91	1.15	.91	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.13	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	.94	1.20	.94	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	.97	1.25	.97	1.18	....	....	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	.99	1.29	.99	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.02	1.34	1.02	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.04	1.38	1.04	....	....	....	$1.10
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	....	....	1.23
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	....	....	1.27
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	....	....	1.31
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	....	....	1.35
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	....	1.39
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	....	....	1.43
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River and Round Mountain 70 cents for all grades. Kern Front 70 cents for all grades.

Economics of Oil Producing Practice

(Continued from Page 18)

figure of $5,000 per well for artificial lifting equipment, we reach a possible total investment of $100,000,000 for lift equipment. Interest on such an investment, at 4 per cent per annum, is $4,000,000 per year, which the operators in that field are saving by adapting the rate of withdrawal to an effective water drive. Assuming a nominal figure of 10 cents per barrel for increased operating and maintenance expense for pumping wells, we obtain an estimated $16,000,000 per year as savings in East Texas by maintaining a rate of withdrawal commensurate with the pressure maintained by the natural water drive. The total saving is $20,000,000 per year, or roughly, $1,000 additional profit per well, per year.

Conserving Gas Energy

In fields that have little or no water drive, it is necessary to conserve the gas energy to the maximum degree. It has been determined that there are fields in Oklahoma which produce crude having a gravity of 40 degrees at the surface, that the gravity in the reservoir is 62 degrees. The higher gravity fluid in the reservoir flows more freely to the drill holes and if the production can be so regulated that the gas will not be drawn out of solution, the probabilities are that greater recovery will be obtained than if the reverse is the case. In many instances, it will be necessary to inject gas into the reservoirs under pressure, in order to maintain sufficient reservoir pressure that a large part, if not all, of the crude will be produced without other artificial lifting means. It is in such fields without water drive and with either free gas areas or large percentage of gases in solution that are ejected readily, that we have one of the most serious problems affecting the industry today. Proper producing practices, under these conditions, are in direct conflict with the established law of capture. It is highly essential that some means be found to modify the interpretations of the law of capture in jurisprudence. Compulsory unitization of all vested interest in such a pool is a very decided step towards true conservation of a natural resource. The engineers in the oil industry must take up this problem and work out a solution. Probably the best method to develop an oil field that is lacking in an active water drive is to work out a spacing pattern commensurate with the depth of the wells and other characteristics, and watch the decline in bottom hole pressures during the early producing life of the pool. The decline in pressure drop should be retarded at some point which can be readily ascertained, and when such a point has been reached, gas should be injected into the reservoir to maintain the predetermined pressure. The economics of this procedure are that a part of the money saved from drilling is expended for plant and line facilities for gas injection, as a result of which, total investment in the field is very, very substantially less than under previous practice and the recovery of oil is as high or higher than under the old methods.

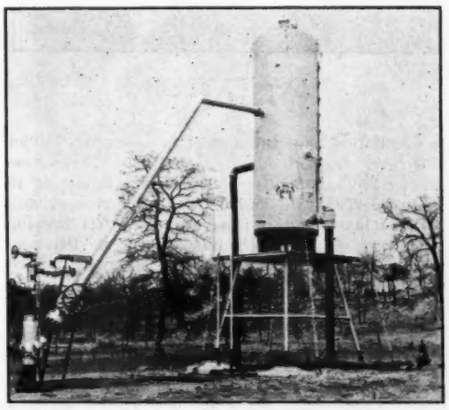
The important part that the engineer plays in advanced practices applied to the recovery of oil should be perfectly obvious. The trouble with the engineering profession is that they fail to emphatically insist upon their convictions being applied. The profession of production engineers must be raised to a much higher ethical standard than heretofore. Occasionally, one hears of a lawyer who will give advice and opinions along the lines that he knows his client desires. These lawyers, however, are not very numerous and their rating is not particularly high in the ranks of their profession. Engineers should adopt a similar point of view, and should insist upon methods and practices being applied which they know, in the long run, will bring more profit to their employers. Engineers in the petroleum business need to develop that characteristic called "courage," and avoid mental dishonesty. There is too much an attitude on the part of engineers and executives to put their jobs above their responsibilities. They fail to impress persistently their superiors with the facts and true situations and results. The industry needs strong men who assert and advocate their convictions regardless of personal consequences. In the end, the cowardly man in any capacity, who consistently retires to a safe position, does no good for himself or his company.

There simply is no question but that oil fields, in which unnecessary wells are avoided and where intelligent effort is applied so as to maintain pressure and produce all of the oil economically recoverable without resorting to expensive old-style pumping, will be immensely more profitable to the operators and will return as much or more to the royalty owners than as operations were conducted even 10 years ago. This additional profit to the operators and equal, if not better, return to the royalty owners can be achieved without any increase in crude prices and consequently, without any restriction on volume of the products sold by this industry to the public. One of the greatest problems confronting the rank and file of the industry today is to overcome the inertia of executives, proration officials, royalty owners, and stockholders with respect to universal adoption of proven scientific principles and practices. It is almost unbelievable that many companies with complete and competent staffs of technical advisors consistently and arbitrarily oppose application of these practices which can only redound to their benefit. It seems to be an insuperable task to attempt the education of stockholders in all producing companies, but it does seem possible to conduct a program of education within the ranks of the industry. It is up to the engineers and technical people, working with operators and producers, to fight for the complete adoption of wider spacing and pressure maintenance. There can be no question as to the ultimate adoption of these practices, but the time element in relation to prosperity of the oil business is highly important. It appears to be a task of the technical people in the companies to insist upon the use of advanced and proven methods, not only for the preservation of professional ethics and prestige, but even in the preservation of their jobs.

Practical Man's Place

There is some thought occasionally that engineers will supplant all of the practical operators and that wider adoption of principles being advocated will result in loss of employment to many men. Such is decidedly not the case. Under modern procedures, many more oil fields have to be produced currently so that, in the aggregate, there are as many wells, or more, than under the old methods, and fully as much, if not more, employment of labor necessary. It takes an intelligent practical man to apply and attain the best results as devised by the technical people. It is refreshing to observe that most of the practical men in the business have appreciated this condition, and are working hand in hand with the technical people.

One also hears a great deal at present about reserves. There is fear in some quarters that reserves are too high and that too many oil fields are being found. We have always had crude reserves, although in past years, we did not estimate what these underground reserves were because it was thought that above ground reserves in steel storage were the only factor which was statistically and economically important. Consumption has increased, and more reserves are required for this higher rate of use of petroleum products than in past years on a lower rate of consumption. Adjusting present reserves for the higher consumptive rate, it is only the relative increase in amount of reserves over any interval that represents any cost to the industry. This cost is relatively unimportant in the aggregate of features that make up the total cost of a barrel of crude. It has been estimated by competent accountants that carrying reserves above ground in steel storage costs from 5 to 15 cents per barrel, per year. It has likewise been estimated that cost of carrying augmented underground reserves is of the order of 2 cents per barrel, per year. Even when we add the increased cost for finding efforts, drilling, acquisition and carrying leases, and overhead, we still get a total cost of producing oil that is easily 15 or 20 cents per barrel less than under the old methods when every well, regardless of depth or characteristics of the producing horizon, was drilled on a 10-acre tract or less, and the whole effort was to get the well on the pump as quickly as possible. This disparity in cost may amount to as much as 50 cents per barrel. Each company which is following these principles and practices is forced to assume unnecessary cost because of the indifference or refusal on the part of other operators to apply the same improved methods.



Typical well flowing hook-up in Fitts pool, Oklahoma

Important Problems

Summarizing, there are several important problems for the oil industry, and particularly the technical people within the industry, to perfect as rapidly as possible:

1. Universal adoption of wider spacing adapted to the peculiarities of each pool, unitization, and pressure maintenance as standard operating practices.

2. Education of public officials and the public indirectly interested in the oil business to the end that under the police power, the law of capture shall be so modified, certainly as to permit, and whenever possible so as to compel, the drilling and producing practices that are here advocated.

3. Persistent and consistent efforts on the part of the industry to improve operating efficiency and achieve lower costs and wider margin of profit on about the existing price levels for crude and products.

4. A better standard of professional ethics among the engineers and other technical people engaged in the oil business, and education of the executives as to the benefits from the practices advocated.

5. Establishing proration on a more scientific basis. Basing allowables on well potentials or flat rates per well are thoroughly unsound from scientific or economic viewpoints. My opinion is that proration should be the allowable per well coincident with a rate of withdrawal utilizing the reservoir energy to the greatest degree of efficiency. If the technologists in the industry can agree upon a uniformly accurate method of estimating reserves, perhaps allowables could be a factor of reserves.

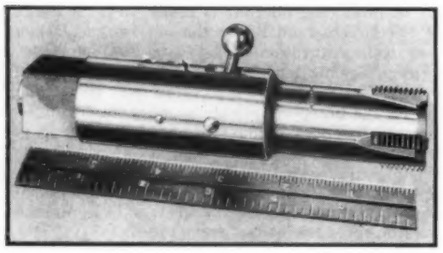
Also, by adoption of these principles, we get a stabilized situation that cannot be secured possibly by the wildly fluctuating production trends, costs, and sales prices that formerly prevailed. One could adduce as an argument against the adoption of these practices that individual wells might be prorated to such a low allowable per well that the profit would be eliminated. Going so far as the imagination can travel, it is scarcely conceivable that such a situation could arise, but, assuming that it might, it is believed that such a condition would operate the economic law of "supply and demand" to the extent that prices would decline, not abruptly, but to some extent which would retard development and in a relatively short time, the lack of finding new oil or additional oil in developed fields would result in an increased allowable for existing producing wells. Even in such an extreme case, we would have a far greater degree of stabilization than has ever been known in the history under practices as followed.

Grateful acknowledgement is given for helpful criticism and suggestions in the preparation of this paper to J. A. Veasey, F. W. Floyd, and L. F. McCollum.

NEW OR IMPROVED EQUIPMENT

Tap Can Be Taken from Work Without Being Backed Out

An improved hand sizing tap of the collapsible type has been added to the line of machine collapsible taps manufactured by the Landis Machine



Co., Waynesboro, Pa. The tap illustrated shows a 1⅜-inch size, with overall length of 6 inches.

This tap, designed primarily as a hand sizing tap to take the place of the solid adjustable tap ordinarily used, offers the advantage of instant withdrawal from the work without requiring to be backed out. It also eliminates the tearing of the threads frequently caused by backing out a solid tap as well as undue wear of the chasers in the backing-out operation. Tapping time is saved, thereby increasing production.

A small handle or trigger is on the side of the tap body for unlatching the tap and collapsing the chasers by pressing back on the handle. The chasers are reset by pressing against a plunger extending slightly beyond the rear of the tap shank. The tap shank has a square end to fit a tap wrench. Any length of shank or tap can be supplied.

The tap is provided with a diametrical adjustment of approximately one-thirty-second inch both over and under the nominal chaser size, a total of one-sixteenth inch. The adjusting screw in the front end of the tap is of the ratchet type, making it self-locking to maintain size. A turn of one notch to the adjusting screw gives a diametrical movement of the chasers amounting to .001 inch. This feature makes the tap especially desirable for hand sizing work.

The Landis collapsible hand tap can be furnished in all sizes from 1⅜ inches to 12 inches. Tap sizes and ranges conform with the regular machine collapsible taps made by this company.

Here and There With Men Who Manufacture Equipment

Stockholders of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., elected Thomas I. Parkinson and George A. Ranney directors of the company.

The Exner-Dodge Packer Co., Coffeyville, Kans., has appointed M. T. "Kap" Kappele, Ponca City, Okla., its representative in the central and western portions of Oklahoma and Kansas.

B. F. Ruether, general manager of the New York Belting & Packing Co., announces that J. O. Donohue and J. D. McLin have rejoined the sales staff.

Macwhyte Co., Kenosha, Wis., has completed a new branch and warehouse building at 1603 N.W. Fourteenth Ave., Portland, Ore. Macwhyte wire rope will be kept for immediate delivery. W. J. Brett, factory representative for the company in the northwest, will make his headquarters here.

H. A. Larsen, formerly manager of structural products division on the West Coast for the Wickwire Spencer Steel Co., 41 East Forty-second Street, New York, has been appointed Pacific Coast sales manager for all the company's products, succeeding R. H. Clapp, resigned. Mr. Larsen will make his headquarters at the San Francisco office, 101 Townsend Street.

Lee C. Moore & Co., Inc., Tulsa, has opened an office at 308 Webber Building, Lake Charles, La., with S. S. Skinner in charge.

Geo. J. Fix Co., transmission equipment, has purchased the property at 2413-15 Commerce Street, Dallas, Tex.

J. W. Lewis, since 1923 assistant to President Gerard Swope, was elected treasurer of the General Electric Co. to succeed R. S. Murray, who retired May 1 because of ill health.

Men Widely Known in the Equipment Field

Jay Taylor has been promoted to general superintendent of the Halliburton Oil Well Cementing Co., a new post made necessary by expand-

JAY TAYLOR

ing activities. For the past eight years Mr. Taylor had been superintendent of the West Texas-New Mexico-Panhandle division, with headquarters in Amarillo, Tex. He joined the Halliburton organization when it was formed in June, 1924, serving first as a truck driver and cementer. Prior to that he roughnecked on a drilling rig and attended Oklahoma University, taking a course in petroleum engineering, which provided groundwork for important assignments to come later. Erle P. Halliburton, president of the company, is proud of the fact that he made it possible for Jay Taylor to go to college, advancing funds for this purpose. About eight years ago Mr. Taylor married Imogene Herring, of Amarillo. They have two children.

Many Advantages Claimed for Plain-End Pipe Protector

The Van Dyke plain-end pipe protector, announced by Pittsburgh Screw & Bolt Corp., Pittsburgh, Pa., is said by the manufacturer to embody many advantages, among which are enumerated the following: Keeps pipe absolutely clean inside; clean bevel for welding; prevents corrosion and protects

FIG. 1 FIG. 2 FIG. 3

machined bevel and face of pipe; helps to keep ends round; no dirt can get inside pipe when it is unloaded along the right of way; eliminates swabbing of pipe, low cost of production and of application of pipe, can be removed quickly. The size, length and weight of pipe can be marked on the protector for ready reference while the pipe is in storage.

In the accompanying illustration Figure 1 is a sectional view showing cap on the end of a pipe section. Figure 2 is a cross-section showing a spot-welded unit. Figure 3 is a perspective view showing pipe and cap spot-welded.

Keystone Drilling Machine Is Mounted on 6-Wheel Truck

The Keystone Driller Co., Beaver Falls, Pa., has announced its Model 74 cleanout machine mounted on a six-wheel Ford truck for reconditioning and maintaining wells. It is an all-steel rig with a 45-foot telescoping steel derrick. It has a bull reel with spooling capacity of 4,000 feet of nine-sixteenths inch steel line and two large V-type molded brakes. It has a sand reel spooling 4,000 feet of three-eighths inch steel line, easily and quickly controlled.

Additional feature is the conveniently located calf reel spooling 250 feet of seven-eighths inch steel line permitting an 11,000-pound single line pull. This machine is powered by a 25-horsepower four-cylinder gas engine at 1,500 r.p.m. Crawler and trailer mountings are available.

Cleaning and Degreasing Fluid

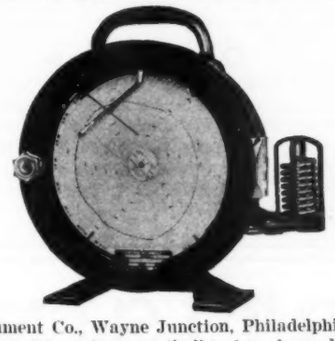
A cleaning and degreasing fluid announced by the Curran Corp., Malden, Mass., is described as a self-emulsifying solvent causing oil and water to mix. "Gunk" does not form a mechanical mixture of oil and water, but mineral oils and greases treated with it form stable emulsions with cold water. To remove grease and oil accretions, the makers state, it is only necessary to treat with a solution of "Gunk," dissolved in kerosene or other low-cost solvent. After penetration the treated oils and greases may be removed by hosing with cold water.

Handy First-Aid Kit

A canvas belt or pocket kit, announced by E. D. Bullard Co., 275 Eighth Street, San Francisco, weighs only 10 ounces, and contains first-aid treatment for snake bites and common injuries encountered by those outdoors. The kit was developed primarily for use by workers in petroleum fields, foresters and construction crews, whose tasks take them into snake-infested territories. Often such workmen are far distant from hospitals.

Temperature Changes Quickly and Accurately Registered

The accompanying illustration shows the improvement that has been made in this type of Brown recording thermometer, made by the Brown



Instrument Co., Wayne Junction, Philadelphia, Pa. The sensitive element (bulb) has been located where it will respond quickly and accurately to changes in the surrounding temperature. Mounted out in the clear, the mercury-filled bulb is subjected to the natural air currents and therefore records true temperatures. The new design also results in greater sensitivity since the measuring system is affected in no way by the temperature of the instrument case. This is important since many portable thermometers have the bulb mounted in such a way that the bulb is subjected to the temperature of the instrument case.

In addition to the improvements noted, which result in greater accuracy and sensitivity, the Brown self-contained portable thermometer is built to withstand the rough handling that must be expected under conditions where portable instruments are used. The metal handle and metal legs are practical and sturdy. The black enameled, die cast aluminum case is light in weight and corrosion-resistant. The completely gasketed door is moisture-proof and the door-in-handle lock is tamper-proof.

Bulletins, Booklets and Other Literature for the Trade

All interested in piping may obtain from Tube-Turns, Inc., 425 Fifth Street, Louisville, Ky., a copy of that organization's new 48-page catalog and price list No. 107. This booklet, with its flexible cover presents helpful information on tube-turn construction features.

A mechanical rivet, inserted and fastened from one side of the job only is described in a folder sent on request by Multi-Seal Manufacturing Co., 123 North Jefferson St., Chicago.

A revised edition of the B.S.&B. Safety Head book is announced by Black, Sivalls & Bryson, Oklahoma City, Okla. This interesting 18-page publication contains helpful information on the subject of safe pressure protection.

Baroco, salt water-resisting drilling clay, and Fibrotex, a material for preventing or regaining lost circulation in drilling wells, are illustrated and described in two bulletins just published by the Baroid Sales Co., Los Angeles, Houston and Tulsa.

"Permanency of Oxy-Acetylene Welding" is the title of a valuable article in the April issue of Oxy-Acetylene Tips, published by the Linde Air Products Co., 205 East Forty-second Street, New York. It discusses the ability of oxwelded joints in pipe to withstand corrosion, hurricane, flood and earthquake.

"How to Be Youthful at 60" is the subject of the leading article in the current issue of the Yellow Strand, published by Broderick & Bascom Rope Co., St. Louis, Mo., which is observing its sixtieth birthday. The Yellow Strand has been published regularly since 1904.

The Young Engine Corp., Canton, Ohio, announces a new catalog, No. 20-J, featuring its complete line of diesel, gas and gasoline drilling engines. It gives special attention to the new automatic brake, which gives the driller more accurate control of the tools, and the reversible transmission, which eliminates gear shifting.

A new booklet, "Republic Rotary Hose and Oil Country Belting," is announced by the Republic Rubber Co., Youngstown, Ohio. It describes three varieties of rotary hose and how they are constructed to withstand high pulsating pressures, the abrasive action of mud and the deteriorating effects of oil.

Bulletin 22-B12, devoted to the application of rotary positive blowers in foundry cupola service, has been issued by the Roots-Connersville Blower Corp., Connersville, Ind.

New literature offered by Worthington Pump & Machinery Corp., Harrison, N. J., includes bulletins on diesel vertical four-cycle engines; balanced multistage volute centrifugal pumps; Freflo centrifugal pumps; centrifugal fire pumps; Monobloc condensate return units and Monoblock pumping units and "Simple Test for Steam Power Plant."

The fourth edition of "Toncan Iron Pipe for Permanence" is being distributed by Republic Steel Corp., Cleveland, Ohio. This new 64-page book is profusely illustrated with test charts and tables.

Service requirements for high temperatures and high pressures form the major theme for catalog No. 11-A10, issued by the Edward Valve & Manufacturing Co., Inc., East Chicago, Ind.

Oil Well Manufacturing Corp. announces publication of Bulletin No. 111, which illustrates and describes Red Devil Dia-Hard steel slush-pump liners. Copies may be obtained by writing the manufacturer at 6,000 South Alameda Street, Los Angeles, Calif.

The current number of Nickel Steel Topics, published by the International Nickel Co., Inc., 67 Wall Street, New York, is of special interest to the oil industry. Among its articles are "Nickel Alloys Resist Sucker-rod Fatigue," "New Crown-block," "Oil-tool Life Increased," "Oil and Alloys" and a pictorial section of oil field equipment.

Detailed information concerning extreme line casing in sizes now available is presented in a 14-page booklet which may be obtained from Spang, Chalfant & Co., Inc., Pittsburgh, Pa.

BUT THEY'RE NOT COWBOYS

Johnnie Best (left), Mission Manufacturing Co., in West Texas and New Mexico, and "Red" Knight, representing Cameron Iron Works, Rector Well Equipment Co. and National Tank Co. in West Texas and New Mexico. In Texas cowboy outfits at the recent oil show in Tulsa.

Marking Jobs Made Easier by Real Paint in Stick Form

Real paint in stick form which is easily applied to any wet or dry surface and which will not run when applied to hot metals, is a new development

for marking products and materials. Markal is the name of this new stick paint, which has many uses in the oil industry. It can be carried around in the pocket as easily as a pencil. It is made in two types—one for cold marking, the other for hot marking.

Markal for cold marking is used for all metals (including structural steel, steel sheets, galvanized iron, etc.), glass, cardboard, boxes, crates, lumber, building stones and blocks, etc. Markal for hot marking is used on steel shapes, forgings, castings, pipes, billets, etc. It marks clearly and permanently at any temperature from 300 to 1,200° F. It does not run or flow while hot, or peel off after cooling.

Figures and symbols remain clearly legible indefinitely. Markal is weatherproof and there is no necessity to "go over" the original markings. In actual use, Markal hot markings are said to have remained as clear-cut at the end of six months as the day they were made.

None of the paint stick is thrown away. When it becomes short it can be instantly heat-welded to a new stick so that even the shortest stubs are used. A convenient holder is available for the protection of operators' hands and as further insurance against waste. Markal is marketed by Helmer & Staley, 2514 South Parkway, Chicago.

Bradford Motor Works Offers New Type of Working Valve

B-M-W Tex type working valves for standard working barrels have been placed on the market by the Bradford Motor Works, Bradford, Pa. The makers assert these valves pump an exceptionally large quantity of fluid. Actual tests, they state, show an increase of 5 to 13 per cent. The construction of the valve, with its many composition rings separated by metal washers, gives it an exceptionally long life even under bad sand conditions. Long runs are obtained with these valves because of the ability of the special rings to withstand wear and the cutting action of the sand. In effect, the plunger portion is a grooved sealed plunger, made of rubber and fabric, readily adapting itself to the tube in which it works. More fluid is pumped by this valve because there is no appreciable slippage, and because of the small frictional drag in the tube. It is said to possess the advantages of both cups and metal plungers.

B-M-W Tex type valves are made in three sizes, 1¾-, 2¼-, and 2¾-inch for standard working barrels, also 1½- and 2-inch for use in 2- and 2½-inch B-M-W Admore liner barrels.

The Contactor-Centrifuge acid treating process is described in Bulletin 200, distributed by the Stratford Engineering Corp., Dierks Building, Kansas City, Mo. This process, which operates at low temperatures, for the purification of distillates containing sulfur, is said to reduce acid requirements.

Doctors Want Helium

The use of helium for the relief of asthma and other obstructions of the breathing apparatus may be available to the person of average means if the federal government will release a part of its supply, Dr. Alvan L. Barach, New York, said in a report to the annual session of the American Medical Association at Kansas City, Mo.

A provision authorizing the Bureau of Mines, which operates the government's helium plant, to sell to hospitals and physicians at not less than cost a part of the supply now allotted to the United States public health service for medical research, was inserted in the interior department appropriation bill for 1937. A total of 5,000,000 feet is allotted to the public health service, but only a small part is used, it was said. The proposal was passed by the house, but stricken out by the senate. Such authorization would lower the price of helium from $20 or $30 a tank to $5 a tank, Doctor Barach said.

Improvement takes place in persons dangerously ill of asthma within a few minutes after treatment is begun. In 5 of 18 cases, Doctor Barach reported, patients apparently were at the point of death.

Doctor Barach has tried using helium in other conditions in which breathing is obstructed, such as infections of the larynx and trachea, or obstruction by a foreign object, hoping to avoid operations on the throat. In a series of 21 cases of numerous types of obstructions, all except one showed at least some relief from breathing the helium mixture. In several of these patients the use of helium made the operation unnecessary; in others it gave temporary relief in conditions too far developed for hope for recovery.

Doctor Barach believes helium may be used to advantage in other diseases of the respiratory system, if it can be made available commercially at a price within the reach of patients of moderate income.

O.N.G. Earnings

NEW YORK, May 25.—Oklahoma Natural Gas Co., Tulsa, reported for the 12 months ended March 31, consolidated net income of $988,341 after charges and taxes, equal, after preferred dividends, to $1.30 a share on the common stock, compared with $439,930, or 30 cents a common share in the preceding 12-month period.

CLASSIFIED ADVERTISING

For Sale—Maps

OFFICIAL NOMENCLATURE MAP OF LOUISIANA

SHOWS: Oil fields in green and gas fields in red, hand-colored. Index giving location of each field and official name. Cities, towns, county seats and principal streams.

SIZE: 38" x 42". SCALE: 1" = 8 miles.

E. C. JACOBSON

Phone: 4-5419 Tulsa, Oklahoma 530 McBirney Bldg.

For Sale—Maps

Oilfield and County Ownership Maps. New price list on request. Send $1.00 for map of Texas and eastern New Mexico.
ZINGERY OIL MAP CO.
Fair Bldg. Fort Worth, Texas

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I BUY AND SELL oil royalties and producing wells, East Texas field. B. A. SKIPPER, Longview, Texas.

Brokers—Salesmen

Sell in the most active area in the United States — The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

MONTHLY PAYING ROYALTIES on which we have filed SCHEDULES A with the SEC at WASHINGTON. Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

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NO MORE DRY WELLS—Try our effective prospecting system; send immediately a printed plan of township and detailed plan of property where you are working. A preliminary report giving the possibilities to get gas or oil will be mailed promptly ABSOLUTELY FREE. Try it you will be surprised. Our motto, "NO OIL NO PAY." Address: Eurisko Prospector, 814 Insurance Exchange Bldg., Montreal, Canada.

Royalties—Production

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ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Producing-ROYALTIES-Non-Producing
Dealers Exclusively
Schedules and Engineers reports furnished
G. D. TERRIEN
412-13 Central Bank Bldg., Tulsa, Okla.

Producing and Non-Producing Royalties. Bosco, Van, Rodessa, West Texas. Wholesale — Retail.
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If you are interested in High Class producing and non-producing royalties for investors write or wire

CHESTER IMES, Inc.

First National Building
Oklahoma City, Okla.

Financing

JAMES E. MILLER, 604 W. Seventh St., Tulsa, Okla., will aid in financial marketing problems. Fee basis.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Box 5411, Philadelphia, Pa.

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Wildcat Leases in Drilling Blocks—$1.00 to $5.00 per acre
Good Geology Plats Furnished on Request

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9,000-ACRE oil lease for sale, located south of Sea-Boards 12,000,000-ft. gasser in Hamilton County. H. B. Opp, Burnet, Texas.

Royalties—Production

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PRODUCING OIL ROYALTIES
for dealers.
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842 Kennedy Bldg., Tulsa, Okla.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
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Van—East Texas—Louisiana Royalties
Bought—Sold.
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(ALL FIELDS)
Bought, Sold and Quoted.
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Los Angeles, Calif.
Telephone Trinity 7391

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OF ROYALTY investors by deed, guaranteed. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

ROYALTY OWNERS
Names and addresses in any state.
Royalty Lists, Box 105, Ft. Worth.

MAIL, OFFICE, TELEPHONE service for manufacturers to the oil industry. In business 8 yrs. Business Service Exchange, Tulsa Loan Bldg., Tulsa.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception."
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Leases—Production

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

NEW MEXICO Oil and Gas Leases and Royalties. Also inquiries and listings wanted. F. R. WARN, Santa Fe, New Mexico.

ECTOR COUNTY Drilling Block: 960 acres short distance northwest Goldsmith pool. Sound reasons for heavy production. Wire H. B. Opp, Burnet, Texas.

LANDS, Leases, Royalties, anywhere, bought, sold. Lands, $2 acre, up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

DRILLING BLOCK Young County, Texas, 100 acres top of structure; 750 ft. first oil sand; 40 gravity oil; cheap drilling near producing wells.
Roy G. Barton, Box 191, Clovis, N. Mex.

WILL SELL HALF OF FEE interest in 80.94 acres at Lane City, Texas, for Five Thousand Dollars, or will sell one-fourth fee interest for Twenty-five Hundred. This land is under lease by a Major; and well located in their block.
ADDRESS OWNER
at P. O. Box 548, Wharton, Texas

SAN JUAN Basin, New Mexico, Offering 320 acres top of structure including Midwest Discovery well, high gravity oil 1,000 feet; wonderful deal for developer or promoter.
Roy G. Barton, Box 191, Clovis, N. Mex.

OFFERING very cheap, fee and all royalty, possible oil and gas bearing territory. 20-40-80 and 160-acre tracts in Oklahoma. Billie Smallwood, P. O. Box 2261, Tulsa, Oklahoma.

EASTERN COLORADO—Have limited supply of oil and gas leases located in Cheyenne, Kit Carson and Yuma Counties. These leases are well located. Just think of twenty-year paid up lease for $2.50 per acre. Also have some well located royalty (non-participating) for $2.50 per acre. Can assemble a block to responsible parties in Kansas or Eastern Colorado. After the 20th of May address me at my Tulsa office, 217 West Fifth St., Tulsa, Okla. Until the 20th of May address will be New Hotel, Goodland, Kansas. W. D. McCOY.

30,000 ACRES approximately available for 2,000-foot test, Woodruff county, Arkansas want development; terms reasonable. B. B. Patterson, Citizens State Bank Building, Houston, Texas.

10,000 acre 10 yr. lease 50c rentals, Thomas County, Kansas. Will sell or make a drilling contract to a responsible party. H. A. Ratzlaff, 330 West 6th St., Newton, Kansas.

PIPE LINE PUMPS

1—Byron Jackson Horizontal Split Shell Centrifugal Pump, 3x15, 4-stage Multiplex, capacity 420 GPM, 1000 ft. hd. at 1800 RPM, direct connected to 200 H.P. General Electric, type KTP, 440 volt 60 cycle, 3 phase, 1800 RPM, induction motor complete with manual control compensator, type C.R. 1034.

1—Worthington Centrifugal Pump size 5", capacity 715 GPM, 98 ft. hd. at 1160 RPM, 8" suction, direct connected to 30 H.P. General Electric type KT, 2200 volt, 3 phase, 60 cycle, 1160 RPM induction motor.

1—Worthington Duplex (piston type) Pump, size 10x12, 8" suction, 6" discharge, Serial No. 280029 direct connected to General Electric Induction Motor 25/12.5 H.P., type KT 526, 440 volts.

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Main Office—1446 Guinotte Ave., Kansas City, Mo.

Branches

Sapulpa, Okla. Arkansas City, Kans. Pyote, Texas

Steel Storage Tanks

We will erect latest type 55,000 bbl. all steel storage tanks at a great saving.

Over 500 tanks on hands from 500 bbls. to 80,000 bbls. Ready for delivery.

50—55,000 Bbl. tanks now being cut down. Haynesville, La. Will sell complete tanks or sheets. 5,000 squares of 2½-ft. x 8-ft. flat 22 gauge galvanized sheets ready for delivery, Haynesville, La.

Wire—Phone—Write—W. C. Berry

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64 North Second Street Kansas City, Kansas.

REFINERY EQUIPMENT COMPLETELY RECONDITIONED

2—10' x 18' x 2⅜" steel, Vogt Reaction chambers, $750 each on car, Ardmore, Okla.

Gasoline, Run Down and Pressure Tanks.

Pumps, all kinds and sizes, condenser boxes, agitators, pipe stills, everything needed for refinery requirements. Complete line of valves and fittings, Oakite treated and tested.

W. C. Berry Wire—Phone—Write H. J. Galamba

SONKEN-GALAMBA CORPORATION

64 North Second St. Kansas City, Kansas

STEEL SHEETS

$\frac{3}{16}$" to ½" thicknesses in 5' x 10' or 5' x 15' sizes, guaranteed like new, any quantity for immediate shipment, 60,000 tons on hand.

WELDED STOCK TANKS

Extra Heavy, any size, delivery Kansas City, Tulsa, Shreveport, Dallas, Houston, Wichita. Wire, write or phone

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Steel Storage Tanks 10,000 to 80,000 barrel capacity. Steel sheets $\frac{3}{16}$" to ½" included, guaranteed like new. Immediate shipment. Pipe, casing and oil well tools.

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FOR SALE—Approximately 12 miles 6" Screw Line Pipe, first class condition, as good as new, with recessed couplings, 8-thread. If interested wire 561 N. Court Street, Paintsville, Kentucky.

PATTERNS for Welded Pipe Fittings. Set of 133 pipe welders templates from 1 in. to 12 in. I.D. and several sizes of casing full size on 20 blue prints 30 in. by 40 in. This set includes tees, ells, laterals, round ends, Y's, swedge nipples, split bull plugs, return bends, etc. Price $15.00 plus postage. Shipped C.O.D.
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419 Vine St., West Lafayette, Ind.

FOR SALE
1—12 x 12 Johnson enclosed twin steam drilling engine.
1—Boykin air cooled 4 speed draw works, with 6" drum and line shafts, complete.
1—BJ slip grip elevator, complete with slips from 12½" to 7".
2—Type F Johnson steam slush pumps, completely overhauled.
Several used rotary tables.
For particulars, write Dee Ford, P. O. Box 597, Pampa, Texas.

Armstrong 50-B all-steel tractor drilling machine mounted on steel wheels; Ford AA engine, 40 ft. derrick; little used. Also guy lines, tools, pipe. May rent to responsible party. John Oswell, Aztec, San Juan County, New Mexico.

FOUR Lincoln Engine driven arc welders, A-1 condition. Stationary type. Service Co., 3732 Cedar, Cleveland, Ohio.

FOR SALE—Air Compressor Laidlow-Dunn Gordon, 12 x 18—12 x 12 double cylinder steam driven. I. Jaffee & Sons, Dallas, Texas.

GAS LIFT compressor plant, consisting of four 90 H.P. twin cylinder, two cycle Superior gas engines direct connected to four 11 x 5½ x 16 two stage Bessemer compressors. Plant complete. Splendid condition, located in Oklahoma City field. Price and inspection upon application.
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SEVERAL USED ROTARY RIGS
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Several Steel Derricks & Rotary Equip.
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Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

Oil Industry Printing

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Situations Wanted

OFFICE MAN—15 years oil experience in accounting and land and lease records. Legal education. Desires connection with independent producer or Land-Tax Departments of producing company. Single, 36, reliable. Go anywhere.
ADDRESS BOX H-270
The Oil and Gas Journal, Tulsa, Okla.

GAS LIFT ENGINEER, 8 years experience, graduate, age 28, trained by major company, capable of directing a gas lift program, desires change in position. Address Box H-283, The Oil and Gas Journal, Tulsa, Oklahoma.

EXPERIENCED Drilling, Pumping, Storage Equipment Salesman (10 yrs. one company in Kansas fields) desires connection to represent one or more companies in Kansas. Address
E. E. D., 305 S. Erie,
Wichita, Kansas.

STENO-CLERK—Exp. in scout-land, production engineering work, want place with chance for promotion, references. Address Box H-291, The Oil and Gas Journal, Tulsa, Oklahoma.

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Petroleum Eng. Laboratories

GEOLOGIC STANDARDS COMPANY
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Porosity-Permeability-Saturation Tests.

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WANT to buy for salvage, abandoned properties in any field or line pipe or casing on top of ground.
E. K. SUPPLY COMPANY
Ketchum Hotel, Tulsa, Oklahoma.

WANTED power driven slush pump. State capacity and working pressure, two thousand feet of 4 inch or larger drill pipe and slips. State size and weight. Nineteen inch or larger rotary, table, steel derrick, state heighth, etc., also interested in swivel hook, rotary swivel, hose connection, large size fish tail bits and other appurtenances for use near Denver, Colorado. State manufacturers name and condition of all equipment. S. B. Geiger & Company, 37 W. Van Buren St., Chicago, Illinois.

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LARGE corporation desires services of sales engineer to cover Texas, Oklahoma territory. Must have previous experience selling lubricated plug valves to oil field and industrial trade. Salary and limited drawing account. Give complete qualifications. Address Box H-281, The Oil and Gas Journal, 415 Lexington, Ave., New York City.

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CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
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Star Manufacturing Company .....
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Taylor Instrument Companies .....
Texaco Development Corporation ..
Texas Iron Works .....
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Timken Roller Bearing Company ..
Timken Steel & Tube Co. .....
Tips Engine Works .....
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Tnemec Company, Inc. .....
Toledo Pipe Threading Machine Co., The .....
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Tube Turns, Inc. .....
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May

29-31—Dallas, Tex., National Oil Scouts Association, Baker Hotel.

31-June 5—White Sulphur Springs, W. Va., Society of Automotive Engineers, summer meeting.

June

1-4—Tulsa, Oil Field, Gas Well, and Refinery Workers Union, International Convention, Hotel Tulsa.

4-5—Pittsburgh, Pa., American Petroleum Institute, Division of Production, Eastern District, Wm. Penn Hotel.

15—Dallas, Tex., Dixie Interstate Board, Adolphus Hotel.

17-20—Dallas, Tex., American Society of Mechanical Engineers.

18-19—State College, Pa., Pennsylvania Grade Crude Oil Association, thirteenth annual meeting.

June - July

29-July 3—Atlantic City, N. J., A.S.T.M., annual meeting.

29-July 3—Atlantic City, N. J., American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall.

September

7-12—Pittsburgh, Pa., American Chemical Society, semiannual meeting.

October

?—Cleveland, Ohio, American Institute of Mining and Metallurgical Engineers.

November

9-12—Chicago, American Petroleum Institute seventeenth annual meeting.